WESTERN GAS

March
1933

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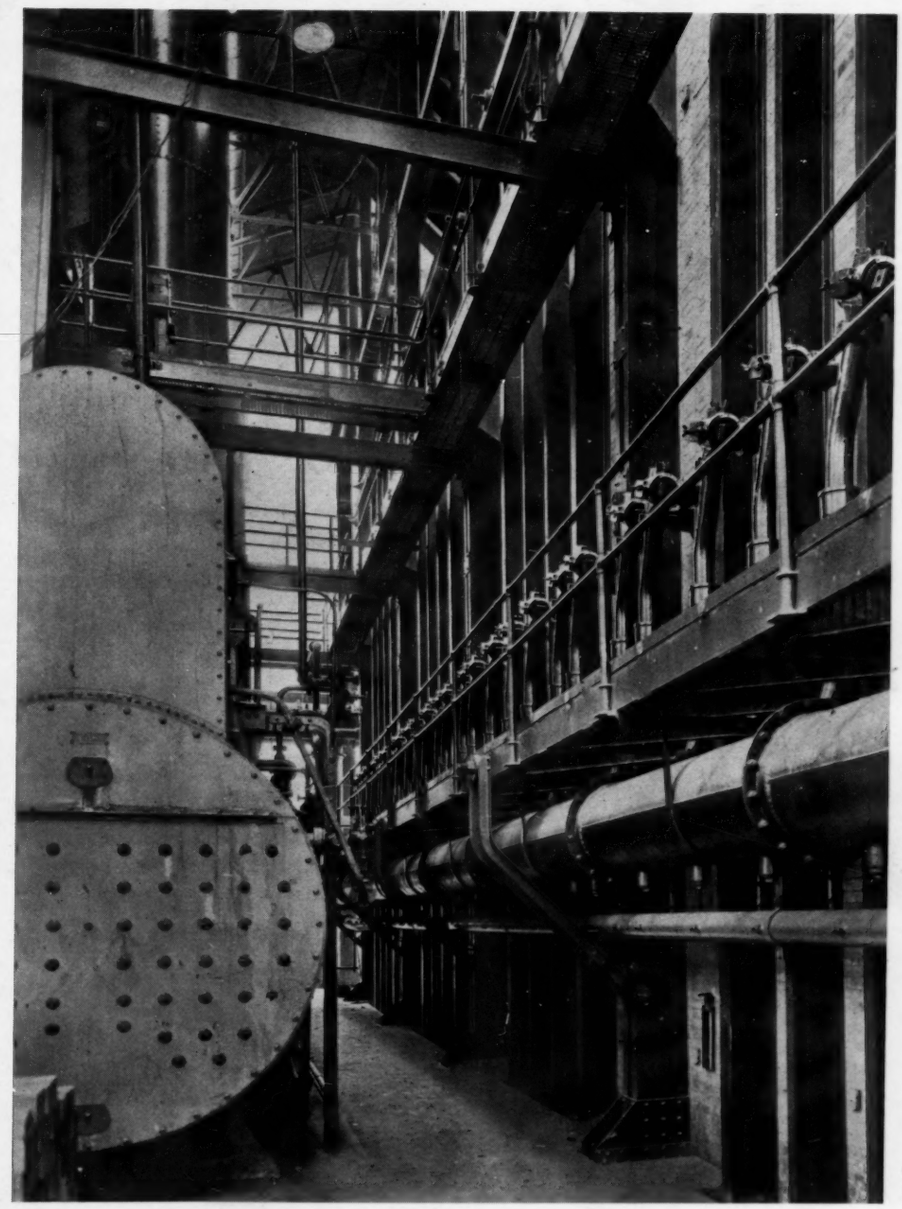

These 30-foot retorts are at work for British Columbia Electric Power & Gas Co. in its new Carrall Street Plant at Vancouver, B.C., formally opened on January 31.

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Sales &
Load-
Building
Edition

A MONTHLY JOURNAL DEVOTED TO THE WESTERN GAS & APPLIANCE INDUSTRIES.

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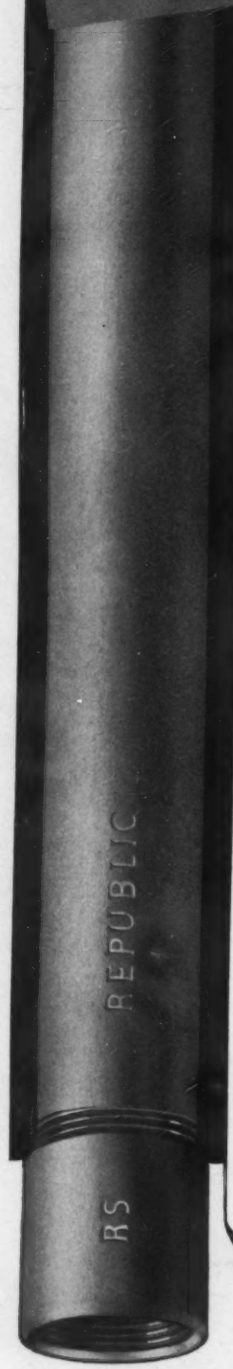
THIS LETTER TELLS THE STORY OF REPUBLIC *ELECTRIC WELD* LINE PIPE • CASING • TUBING



SIOSI OIL CORPORATION
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TERRE HAUTE, INDIANA

March 18, 1932.

Republic Steel Corporation,
Youngstown, Ohio.

Attention: Mr. J. R. Holmes,
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With kindest regards, we are

Yours very truly,

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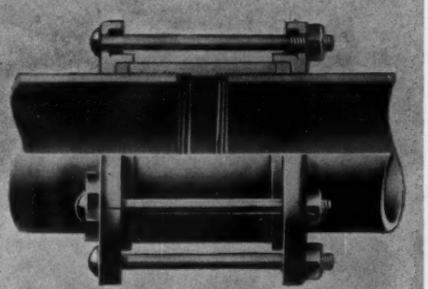

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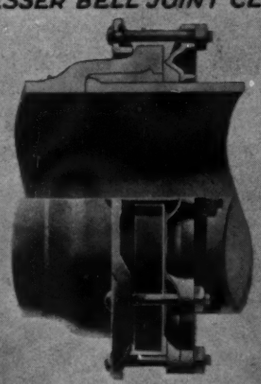

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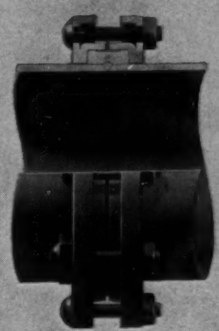

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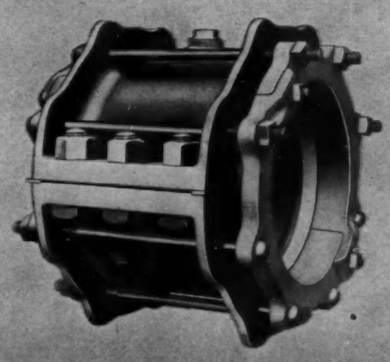

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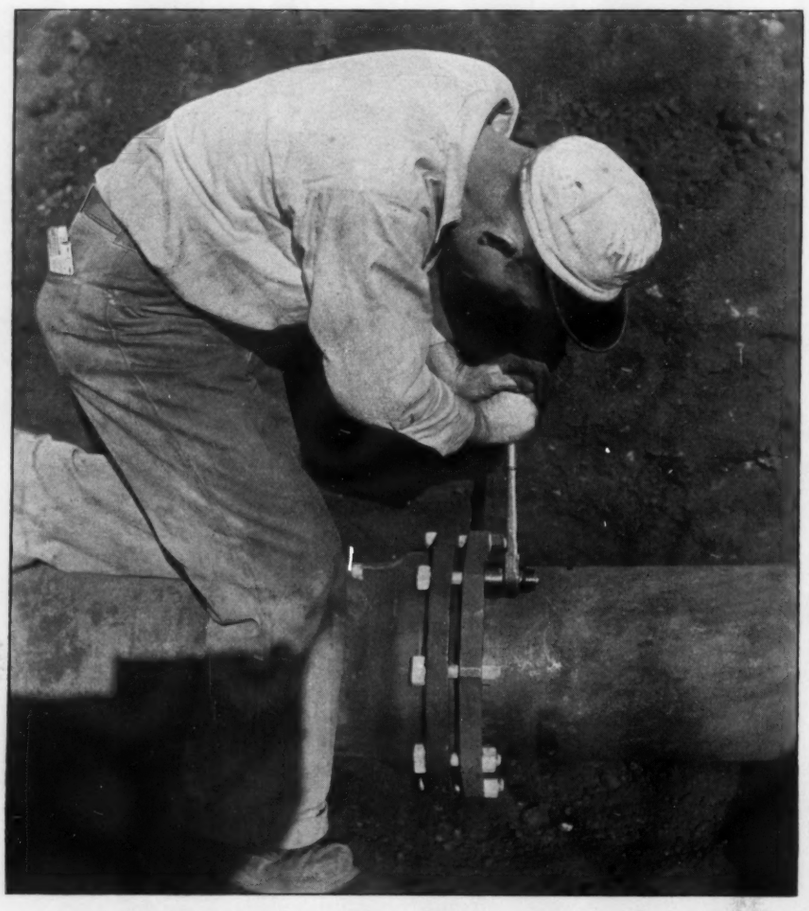

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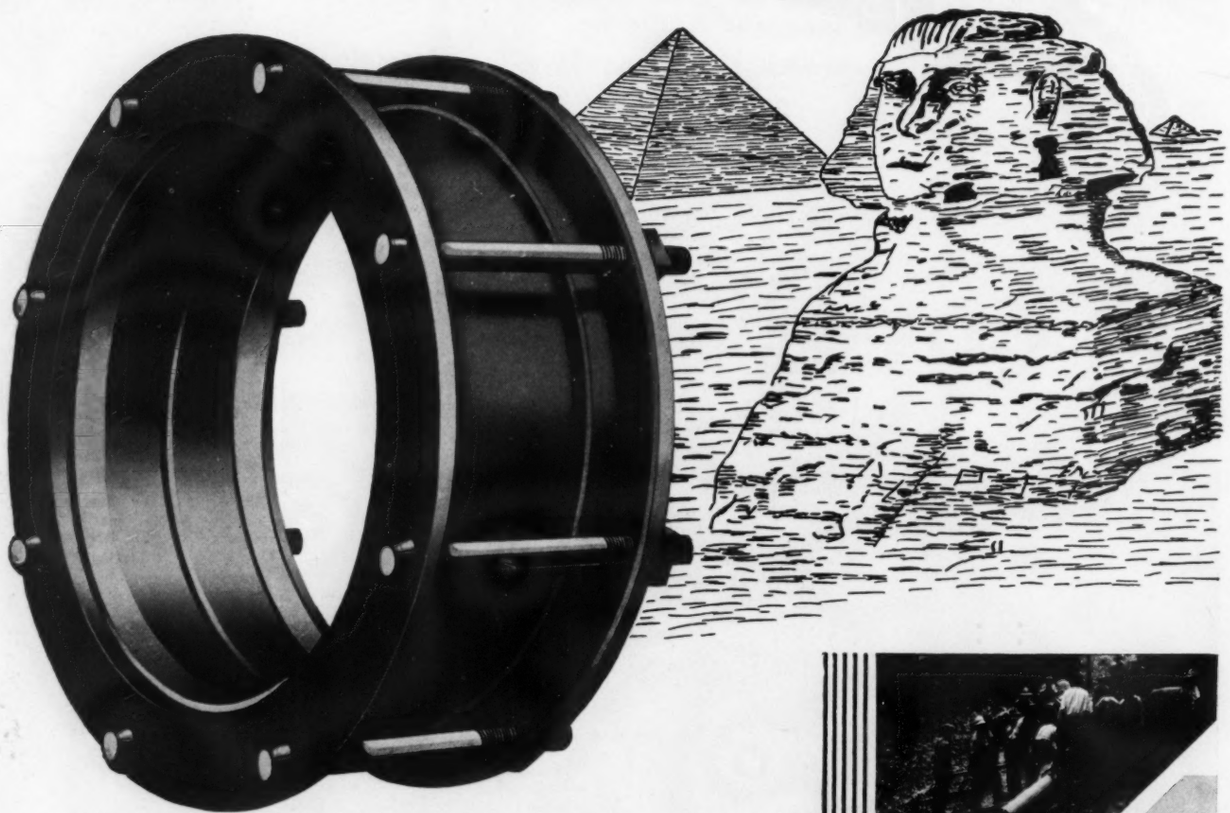

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THE PACIFIC COAST GAS ASSOCIATION

AND

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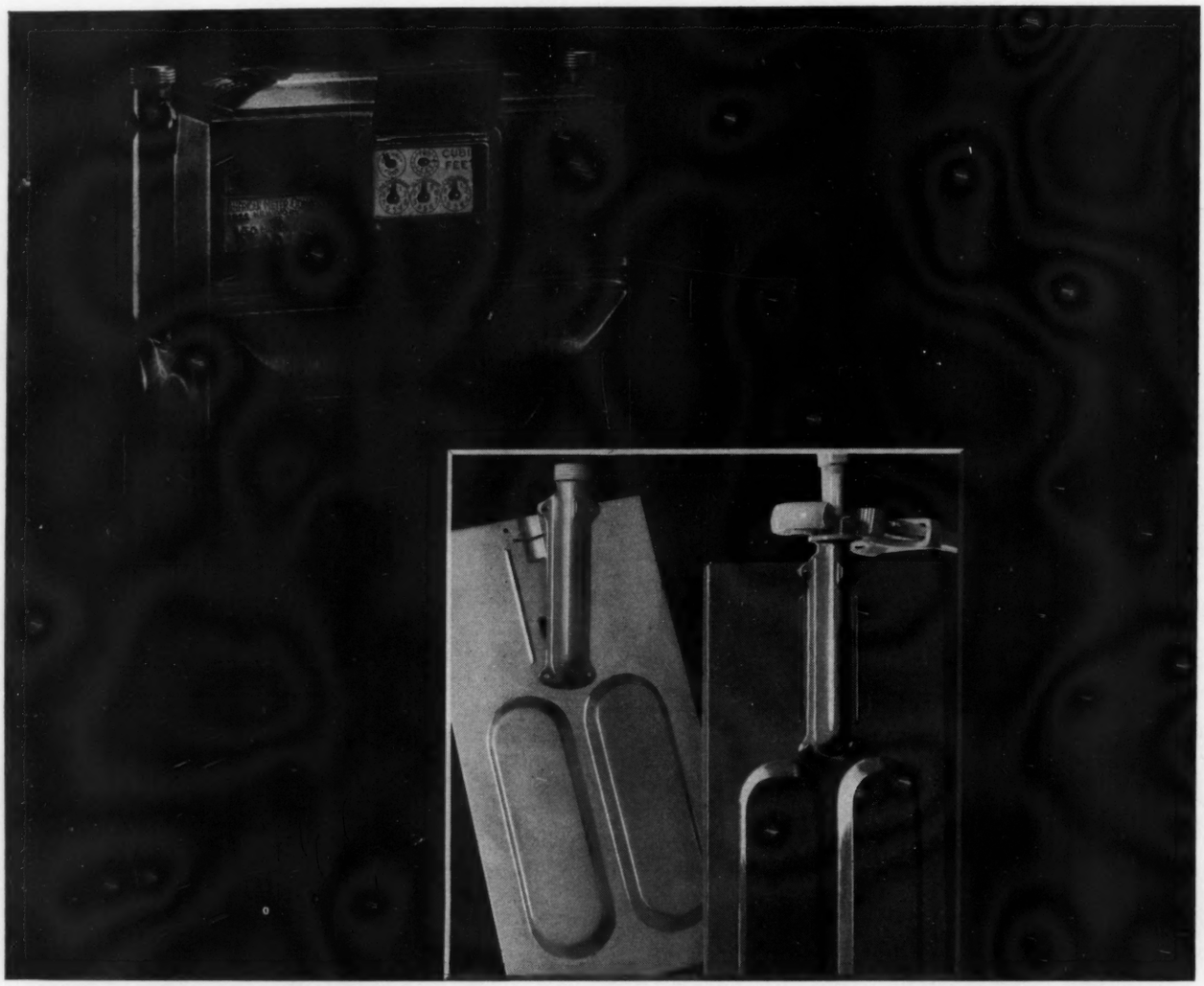

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March, 1933

WESTERN GAS

"Reg. U. S. Pat. Off."

Vol. IX, No. 3

A Monthly Journal of the Gas and Gas Appliance Industries in *Western America*

Review of the Month

No Substitute for Load-Building

Load-building is the theme around which this issue of *Western Gas* has been prepared. Much space is given to an analysis of views upon current sales conditions, as reported at the A. G. A. sales conferences held during the past three weeks in Chicago, Dallas, and Pittsburgh. These meetings brought together upwards of 700 sales managers, manufacturers, and sales-minded representatives of company managements.

Room for Improvement in Federal Gas Statistics

Recent announcement from the Bureau of Census at Washington that a comprehensive survey of electric light and power, electric railway, telephone and telegraph industries is being undertaken in connection with the quinquennial census for the year of 1932 calls to mind a limitation in present government statistical methods affecting the gas industry.

In the present set-up it is impossible to get a consistent, over-all picture of gas operations from any one government source, and the record yielded by consulting all government agencies gathering gas statistics does not conform to the industry's own record as efficiently compiled by the American Gas Association Statistical Department.

Part of the difficulty arises from the fact that gas statistical work is parcelled out among several agencies, chiefly the Bureau of Census and the Bureau of Mines. In reporting on manufactured gas operations the Bureau of Census includes only those companies which actually manufacture gas, thus excluding those which purchase their gas from merchant coke ovens or steel works. A.G.A. figures of course include all manufactured gas distributing companies.

Also, lack of agreement between Bureau of Census and Bureau of Mines on the status of some companies (whether manufactured or natural) results in several large utilities being omitted in both sets of figures, while other utilities serving manufactured and natural gas appear in both tabulations.

Clearly, there is need for agreement between reporting agencies, and for a consolidation of all gas industry figures.

Municipal Gas Projects Eying R.F.C. Funds

Since the Reconstruction Finance Corporation began operations there have been several applications, and rumors of many others, for loan of its funds to float municipal gas projects. A municipal plant conceived for Pierre, South Dakota, sought R.F.C. help without success. Similar request for a loan to further a municipal plant at Richmond, Kentucky, was reported upon favorably by the R.F.C. Engineering Board. The plant was not in competition to private interests. It seems uncertain under the present law whether the R.F.C. is permitted to make loans to municipalities to construct or reconstruct utilities. But however the law may be construed the fact remains that thus far no loans have been made in competition to private business, from which it may possibly be concluded that none such will be made. This is the eminently right standard, and the R.F.C. has the commendation of private industry for operating on such a basis. It would be a sorry spectacle, indeed, if national funds were to be advanced for use by municipalities in duplicating existing investments.

Regulation of Gas in Interstate Commerce

Early March sessions of the House Committee on Interstate and Foreign Commerce brought recommendation for Federal regulation of gas in interstate commerce, based upon a report by Dr. Walter M. Splawn, special counsel to the committee. In formulating any legislation, the committee held, Congress should consider whether certificates of public convenience and necessity should be required for new gas line projects. Establishment of fair city gate rates for pipe line deliveries either to privately owned utilities or to municipalities were contemplated in the committee recommendation. No vigorous effort to push legislation in the special session of Congress is anticipated, though a bill may be produced for committee consideration.

Is Metered Fuel Oil Service in the Offing?

Whether or not it points a trend in future oil competition for the domestic heating market, there is interest in a proposal for metered service of fuel oil to Long Island homes, through pipe line distribution. Franchise was asked in February to lay mains in several South Shore villages. The proposal, as reported, is to serve fuel oil at current market prices through domestic meters, oil burners to be furnished on a rental basis.

How Should *the* Combination Company View *the* Electric Range ?

By CLIFFORD JOHNSTONE

Managing Director
Pacific Coast Gas Association

A GREAT deal has been written about the electric range and its possibility as a serious threat to the gas cooking load. Much that has been written on both sides is in need of debunking.

Contrary to the expressed opinion of many gas men, the electric range is an excellent and serviceable appliance, but on the other hand it falls far short of the extravagant claims made for it by its manufacturers. Every fair comparative test shows that it can render just about the same service as can a gas range, but at a higher first cost, a higher operating cost, a higher maintenance cost, and a higher time factor per operation. Its claims to superior controllability, safety, cleanliness, less shrinkage of food, etc. are bunk—pure bunk.

Nevertheless the electric utility is well justified in pushing the electric range. It is profitable business and imposes no serious load problems because of its diversity of use when installed in sufficient numbers. It is a serious threat to the gas company which is not on its toes in a competitive way, and particularly to that company which neglects its primary duty of serving clean gas at adequate pressures.

As was brought out so ably by Mr. J. L. Stone in his President's Address to the 1932 Convention of the Pacific Coast Gas Association, the future of the electric range as a competitor of gas lies with the combination gas and electric company. The 1932 report of the American Gas Association committee on gas cooking states that 45 per cent of the gas meters in the United States are controlled by combination companies. If all these companies decide that the gas range is old fashioned, if they all desert it in favor of the electric range, if they all contribute to national and local electric range campaigns, if they all devote their own advertising and sales promotion exclusively to the electric range, then it is only a question of time before the gas range is as dead as the dodo in large sections of the country. The question is: Will the combination companies desert the gas range?

The answer, of course, is No, but nevertheless a sufficient number of combination companies have shown such an inclination to flirt with the electric temptress that the good old housewife, gas, has been a bit nervous of late. She has been taking beauty treatments and has so dolled herself up that, as old as she is, you can't tell her from one of those modern electrics.

The problem facing the combination company is an economic one which must be studied from both the viewpoint of the public interest and the interest of the company's stockholders. Consumers desire the best possible service at the least possible cost and except under extraordinary conditions the gas range is the answer.

The answer is much more difficult when considered from the viewpoint of the stockholders. Here one must consider investment costs, rates of return, the overall cost of producing and delivering a B.t.u. in the form of gas as against its cost in the form of electricity, rates as fixed by public authority, and many other extremely variable factors. However, most of these considerations are in favor of gas. In general the overall thermal efficiency of the gas-making process is two or three times that of an electric plant and distribution system. The investment in plant is approximately one-third, and the unit operating expenses on a B.t.u. basis one-fourth of that necessary to render electric service. Only in the efficiency of utilization is electricity superior, but with this taken into consideration, useful heat can be supplied in the form of manufactured gas at approximately half the cost to the company that electricity can.

It is possible to evaluate all of these variables if given the details of any particular situation, but it is difficult to set up an average situation. The only purpose of this article is to establish a method, and if the following assumptions are not reasonable the answer is—use your own.

Assume a combination company serving gas and electricity to an urban community, with excess production and distribution capacity in each branch of the service and with both gas and electric services to all domestic consumers, but because the electric services are designed to carry only light socket appliances, practically all domestic cooking is being done with gas.

The investment per customer is $200 in the gas department and $500 in the electric department.

The operating ratio (ratio of expense before depreciation to gross revenue) in the gas department is 65 per cent and in the electric department 45 per cent.

The rates in both departments have been designed to yield a fair return on the investment. The gas range usage pays the top price of $1.50 per M c.f. Because of its general acceptance there is very little sales expense incident to holding this gas range business and it is therefore the gas department's most profitable business. In the electric department the analogous business is the lighting load. Power for electric cooking is sold for 2 cents per Kwh.

The gas sold is a manufactured gas of 550 B.t.u. per cubic foot. Its production cost is 35 cents per M c.f. in the holder. Electricity is produced by both steam and water power at an average cost of 4 mills per Kwh at the switchboard. These commodity costs do not include fixed charges or distribution expense. Inasmuch as electric distribution costs on a B.t.u. basis are in the order of four times gas distribution costs,

THIS subject of where the combination utility should stand on electric range promotion is beginning to get the airing which it has needed these several years. General enthusiasm for electricity . . . much of it carefully fostered, where the electric range is concerned . . . has brought this excellent appliance into situations where its use cannot be economically justified.

Clifford Johnstone

What has hitherto been lacking is a basic method for use by the combination company in reaching its decision either to push or refrain from pushing the electric range. Such a method, clear and simple in its application, is here set up by Mr. Johnstone.

It will be recognized that the assumptions made by the writer are extremely conservative, though the figures used are subject to much variation for individual companies. Their only purpose, as the author states, is to exemplify a method of determining the true economics of electric range load on a combination company system. "Western Gas" offers the results of Mr. Johnstone's analysis in the belief that it will do much to clarify this issue.—Editor.

it would be fairer to gas to use the costs at the appliance. However the method would be the same. The annual consumption per gas range is 24 M c.f., yielding an annual revenue of $36. The annual consumption per electric range is 1,935* Kwh yielding a revenue of $38.70.

*Based upon a number of comparative tests between gas and electric ranges, both with oven heat control and insulated ovens and used for identical overall cooking service. These tests indicate that the gas range top burners will use approximately 1.5 more B.t.u. than the top elements of an electric range, and the oven ratio will be 2.3. The assumption made above is that the gas range will use twice the B.t.u. used by the electric range.

$$\frac{550 \times 24000}{3412} \times \tfrac{1}{2} = 1935 \text{ Kwh}$$

This is for identical usage and does not take into account the natural tendency to curtail on use because of higher bills.

In attempting to determine whether it will profit a company so set up to begin a drive to replace gas ranges with electric ranges, it is obvious that the increased gross revenue secured by getting $38.70 for a service previously rendered for $36 is not the answer. The effect of decreased earnings and idle capital in the gas department must be considered for under state regulation the gas department losses cannot be bolstered by excessive earnings in the electric department. Both must stand alone.

In the first place the substitution is not in the public interest. The customer pays more for an identical service. It is not good public relations to persuade him into it.

One quick method to determine the overall effect of the substitution on the welfare of the company is to use the operating ratios to derive the respective net revenues for comparative purposes. With an operating ratio of 65, the $36.00 gas revenue yields a net revenue of $12.60. This alone is a 6.3 per cent return on the entire $200 per consumer invested in gas properties and if discarded cannot well be replaced because the next best base load, domestic water heating, cannot be universally sold by itself at a $1.50 per M c.f. rate. With an operating ratio of 45 the $38.70 electric revenue will yield a net revenue of $21.28 which is a 4.3 per cent return on the $500 per customer invested in electric properties. From an overall investment basis the company has lost by the substitution.

Because the first cost of the electric range will average 50 per cent more than a gas range and because it will cost more to operate and maintain, the electric range business will not be acquired in any volume for a number of years, even with intensive and costly sales promotion. Therefore sales will be spotty, in many instances requiring a separate transformer for each range and possibly reinforcement of the distribution system. With every range sold a new service must be strung and a new meter set. Some companies have been obliged to expend over $200 for new facilities for each electric range connected. For the purpose of this discussion we will say that $50 per range is added to the capital, which at 13 per cent to cover fixed charges is a $6.50 annual charge.

In substituting an electric range for a gas range, the company cannot afford to overlook the probability that it will be called upon for additional gratuitous service. The gas range requires practically no service under normal conditions. The electric range is subject to fuse and element trouble and high bill complaints are likely to be more numerous. We will assume that the electric range will necessitate two more service calls a year which, at $1.50 each, will cost $3.00.

The net result of substituting electricity for gas under these conditions will therefore be:

Gross revenue from the electric range (1935 Kwh at 2c)		$38.70
Commodity cost (1935 Kwh at 4 mills)	$7.74	
Fixed charges on new capital (13% on $50)	6.50	
Extra service (2 calls at $1.50)	3.00	
Total direct costs		17.24
Net from electric range		$21.46
Loss in gross revenue from gas range	$36.00	
Commodity cost of gas saved (24 M c.f. at 35c)	8.40	
Net loss from gas range		27.60
Net loss to company per range per year because of substituting electricity for gas		$ 6.14

If in this example we had used commodity costs as delivered at the appliance of 60c per M c.f. for gas and 1c per Kwh for electricity, the loss of $6.14 would have become a loss of $11.75 per year.

Granting that the above analysis is extremely elementary, it nevertheless reveals the essential facts. If anything, it is unfair to gas because it does not evaluate the annual cost of the idle gas department capital upon which the gas range alone earned 6.3 per cent, nor the effect of the loss of the gas range business on rates for more competitive classifications. Furthermore, it will still be discouraging to the electric range proponent under a wide range of assumptions because there must also be paid the sales, advertising and promotional expense incident to selling electric ranges in any numbers. All electric range campaigns are costly, and the reader can set his own figure as a selling cost per range. Instances have been reported, however, in which this selling expense has exceeded $100 per range. It might be argued that the sales expense on an appliance is only incurred once and therefore properly can be amortized over the life of the appliance. However, a system full of electric ranges is not sold in one year and the promotion cost must be included in each annual budget for an indefinite number of years if results are to be obtained. For a combination company, at least, a sound policy dictates that the promotion expense be earned in the 12 months after it is incurred.

Obviously the company which could gain the most by pushing electric ranges would be one with low gas rates and high electric rates. This would be a company selling cheap natural gas. The figures might be as follows:

(Continued on Page 46)

Sales Conference Highlights

Mid-West . . . Southwest . . . Eastern

▲

IT is appropriate in this Sales and Load-Building Edition of "Western Gas" to survey the three regional sales conferences which the American Gas Association Commercial Section has just concluded. Since the first of these meetings was held some seven years ago they have grown to be of tremendous value to the industry, particularly so in this time of changing standards through which we are passing.

In the following pages the reader will find digests of a great number of discussions given before these three meetings. Cooperation of J. W. West, Jr., secretary of the A. G. A. Commercial Section, A. E. Higgins, secretary of the A. G. A. Natural Gas Department, and the authors of papers who made copies available to "Western Gas" for this review, is gratefully acknowledged.—Editor.

▼

Chicago Meeting

MAINTENANCE of load-building in the face of limited incomes and tightened fuel competition was the central theme evident at all three of the sales conferences conducted by the American Gas Association Commercial Section during February and early March.

J. W. West, Jr.

February 14 and 15 brought better than 300 representatives of utilities and appliance manufacturers to the seventh Mid-West Regional Gas Sales Conference sessions at Hotel Sherman, Chicago. Stanley Jenks, Northern Indiana Public Service Co., as chairman of the Council in charge of the Conference presided over the session.

Utility cooperation with appliance dealers and heating contractors had a considerable place on the program. Under the head of competition, aspects of water heating and cooking market trends were presented. A morning program was given over to sales trends from the manufacturers view point, with gas refrigeration, house heating, and space heating representatives presenting papers. Use of manufacturers advertising material was the topic of a round table discussion in which eight gas company and manufacturing company speakers participated. A committee was appointed to recommend plans for designing more effective material and putting it to proper use.

John A. Fry of the Detroit-Michigan Stove Co. reported that the work of the manufacturers' national gas range advertising program was progressing, an agreement having been reached among a number of the manufacturers that anticipates the launching of the program around the last of March.

One of the most valuable papers at the conference was C. A. Nash's description of "The Master Stroke" plan of selling house heating on United Light & Power properties in Nebraska, Iowa and Minnesota. Much of the content of this paper was given in *Western Gas* in February in an article reporting various forms of special house heating selling.

Many of the significant papers from the Mid-West meeting will be found in abstract form in the ensuing pages.

Keynote Views From *an* Executive

KEYNOTING at the Chicago Mid-West Regional Gas Sales Conference, Morse DellPlain, president of the Northern Indiana Public Service Co., turned the attention of sales executives to several primary issues now before the industry, among them: The present public hysteria for lower rates, irrespective of the earning position of utilities; the theory of promotional rates as they now are, and the part sales departments can play in maintaining them in the face of the foregoing condition; political ownership; trade relations, with emphasis upon need for a revision in salesmen's compensatory schedules and the developing of the field to permit all manufacturers of quality gas appliances to operate in a utility's territory without harassing competition from the utility's retail department.

Most significant of all were Mr. DellPlain's remarks on the combination company's attitude toward electric range promotion. The speaker's firm conviction that combination companies should put their sales effort behind gas ranges is supported by the results of studies on his own company system. Mr. DellPlain's comments on this subject gain considerable force from the fact that he won his spurs in the utility business as an electric power salesman and now heads an alert combination utility. *Western Gas* welcomes the opportunity to present the following extracts from this section of his address:

THE MEN WHO FOUNDED our business and they who have developed it to its present status, invested their millions of dollars on the one fundamental principle that the acquisition of certain classes of business would be inevitable. When we were gas lighting companies, our gas men knew that candlelight and oil lamps could do the job cheaper. They went ahead, however, because they knew that people would use gas for lighting because it was better and well worth the extra cost. Most of us can remember the development of the electric incandescent lamp and the replacement of our "base" lighting load with the cooking load. It took the electric lamp to make us realize that our scope was really selling a fuel service. This realization gave the gas business a new impetus and generating plants were built, distribution systems laid and extended on the well-founded supposition that despite the coal, oil and wood ranges which were cheaper to operate, people would cook with gas, notwithstanding the extra cost, because it was the logical fuel and much superior to any other.

Morse DellPlain

In other words, the gas business is founded on the theory that its invest-

ment can be justified by the acquisition of what might be termed "base" load. The domestic cooking load is the gas companies' "base" load. It is the bread and butter of our business. Having made an investment and with most of our fixed charges taken care of by our cooking rate, we are, theoretically, at least, in a position to go after what might be called "increment" load. This is the business which, because of competitive conditions, must be obtained on a purely competitive basis. I have in mind such load as domestic water-heating, refrigeration, incineration, clothes-drying, home-heating and home-cooling. This is truly "increment" load. Our promotional forms of rates recognize the basic feature of the cooking load and the increment nature of these other uses to which gas can be applied. It is very obvious that the stronger our "base" load revenue happens to be, the more favorably situated we are on a price basis to meet our competitive fuels in the water-heating, refrigeration and home-heating fields. Vice versa, weaken our "base" load revenue and we make it harder for ourselves to compete for the "increment" business. This automatically affects our ability to continue to serve equitably our base load customers. The gas consumer is directly interested in the gas industry being able to build up its "per meter" domestic consumption. The economics of the business are such that in this way only can adequate gas service be maintained economically.

As a combination man I am greatly interested in the strenuous efforts being put forth by the electric people to capture the domestic cooking load. I can understand their viewpoint, but I cannot agree with it, at least as far as the combination company is concerned. In the electric business, the base load is lighting and small power applications, such as clothes washing, vacuum cleaning and food-mixing. The cooking load is very definitely "increment" load. To the combination company, the idea of trading the base load of the gas utility for the increment load of the electric is fraught with the utmost danger to the gas utility without offering the combined operation anything to offset the inevitable losses in the gas end of the business.

Allow me to repeat here what I have said publicly many times before: "After a very careful study of this particular angle of our business, I am firmly convinced that very definite policies should be adopted by the management of combination properties looking toward the protection of the base load of each class of service and that the aggressiveness of the sales effort should always be directed toward building up the increment load." Since I first made that statement I have found no reason to change my views on the subject. In fact, the more I study the situation the more convinced I am of the soundness of that position. In our company, we made a very careful study of the economic effects of electric cooking at various degrees of saturation in a particular combination district which was doing just about as good a job as we had a right to expect, from an earning viewpoint, on both utilities. I wish I had the time to give you the details of the study for they are mighty interesting. You have my assurance, however, that it required a very low electric range saturation to play havoc not only with the gas utility, but with the combined earnings of the district, and with no resulting benefit to either the gas or electric consumers. No utility policy can be properly determined without fullest consideration being given to the ultimate effect on the consumer.

"Some extremists go so far as to predict that the American people will not only cook their meals with electricity ultimately but that they will also heat their homes as well. The latter prediction seems most fantastic as its realization would require the production of about 45 times as much energy as is now being generated hydro-electrically and about 3 times the ultimate generating capacity of all usable streams in the United States.

R. M. Conner

At the same time a further analysis of this subject indicates that the average cost of hydro-electric power plants has increased from roughly $100.00 per kw. capacity in the early history of our country to as much as $600.00 per kw. in same instances in 1931. Furthermore, the percentage of electricity generated hydro-electrically is decreasing each year and has now fallen to about 33 per cent of the total amount of power produced annually. Still further, this percentage should grow smaller as new power sites become more expensive and are located farther away from available markets.

"While marked advances have been made in the production of electrical energy from steam power plants, the average now probably being about 0.6 kw. per hour per pound of coal, it should be borne in mind that most of such plants still operate at an overall efficiency of only about 20 per cent. Estimating the transmission and distribution losses at 15 per cent it is doubtful if 15 per cent of the energy originally available is finally utilized."

He pointed out next that manufactured gas at present rate levels will deliver a B.t.u. at a considerably lower average cost than will electrical energy, this being more evident of course in the case of natural gas. Several factors operate to increase the advantage which manufactured gas should continue to enjoy—use of refinery gas for enrichment, mixing of gases, other production improvements. Also growing use of liquefied petroleum gases in rural districts which gain and hold load that otherwise might forever be lost to city gas.

Electricity for cooking will cost roughly twice what manufactured gas costs, and three times the cost of natural gas, when all factors are considered. Table No. 2 was submitted in proof of this statement, as regards the manufactured gas comparison. Favorable as these figures are to gas, they do not take into account that installation costs for electric ranges will average roughly two to three times those for gas ranges.

As a general summary of gas range advantages over electric Mr. Conner offered the following:

1. The larger number of makes, designs, and different sizes of gas ranges afford a greater variety from which to select (275 manufacturers produce gas ranges; about 20 make electric ranges.)

2. Gas ranges are considerably less expensive than electric ranges from the stand-

Surmounting Cooking Competition

"GAS range load accounts for 10 per cent of the total manufactured and natural gas sendout—38 per cent of the manufactured alone," said R. M. Conner, A.G.A. Testing Laboratory director, at the outset of his address to the Mid-West Conference.

To indicate the direction in which future competition may be expected Mr. Conner referred to figures on energy requirements of the United States for 1920 and 1930, showing coal to be definitely on the decline, other solid fuels either losing or barely holding their own, and petroleum, electricity and gas all showing pronounced gains. The figures compiled by the speaker, in part, were the following:

TABLE NO. 1

Type of Fuel	% U. S. Energy Requirements 1920	% U. S. Energy Requirements 1930	% Increase or Decrease over 1920
Coal	69.9	53.6	—19.2
Coke	6.4	5.8	—5.9
Wood	6.6	6.3	+1.3
Petroleum	11.0	22.8	+100.1
Gas	4.5	9.8	+120.0
Electricity	0.7	1.7	+175.0

Turning his attention to the essential economics of electric competition Mr. Conner made these observations:

TABLE NO. 2. COMPARATIVE COSTS OF GAS AND ELECTRICITY FOR DOMESTIC COOKING PURPOSES

Item	Electricity	Gas	Excess of Electricity Over Gas, Per Cent
1. Estimated initial cost of range	$150.00	$100.00	50
2. Estimated annual carrying charge (Assum. 10 year life)	15.00	10.00	50
3. Estimated annual cost of maintenance	2.50	1.50	60
4. Average cost of service per unit of measurement	* 0.0352	* 1.14	....
5. Estimated monthly consumption kwh or cu. ft.	85	1200	....
6. Estimated monthly cost of energy	2.99	1.37	118
7. Estimated monthly carrying charge	1.25	0.83	50
8. Estimated monthly maintenance costs	0.21	0.12	66
Total Monthly Cost of Service (Items 6, 7 and 8)	$4.45	$2.32	92

*Average costs of manufactured gas and electric service supplied, respectively, by the American Gas Association and the National Electric Light Association.

point of first cost, installation cost, maintenance cost, carrying charges, and operating costs.

3. The cooking speed of gas range top burners is from 40 to 90 per cent greater than that of electric range top heating elements. Further, the time ratio of oven heating varies from 2.6 to 5.4 in favor of gas, depending on the oven temperature finally obtained.

4. Gas ranges are far more flexible in performance. This is a very important factor in saving fuel and one that provides more accurate control of heat.

5. Gas burners are easier to clean than electric heating elements and are not subject to such frequent periodic replacements and repairs.

6. Electric current interruptions occur more frequently than complete disconnection of gas service. This fact makes the gas range more dependable.

7. The second-hand or trade-in value of gas ranges is relatively higher on account of the ease with which gas equipment may be re-installed and on account of the electrical industry's widely varying installation policies.

Hardware Dealer Cooperation

RIVERS Peterson, editor of "Hardware Retailer," and himself a practical dealer with a background in gas appliance selling, brought a very practical message to the Mid-West Conference. Assuming that gas utilities are primarily concerned with increasing gas consumption and thus interested in developing retail outlets to the full, Mr. Peterson gave this frank formula for securing cooperation:

"If you really desire cooperation you may as well make up your minds to pocket some pride and become salesmen, not of merchandise, but of good will and good fellowship to the dealers in your respective towns."

Frequent, friendly personal contact was strongly recommended. The opinion was expressed that local utility managers are often more at fault than their superior executives in failing to make the most of dealer relations.

Mr. Peterson gave several examples of useful cooperation which utilities might extend to merchants selling appliances, some of these practices being already in vogue. Among them he cited:

—sending letters to merchants telling them of prospective main extensions, before the utility canvasses the new territory;

—fostering cooking schools at which all dealers are invited to display ranges, with proper mention of their lines by the demonstrator;

—the example was given of an electric utility which each month issued a letter to dealers outlining the company's merchandising program for the coming month, telling what would be advertised and at what price, dealers being invited to participate in any special features.

Mr. Peterson went on to quote the 13 recommendations for utility merchandising procedure adopted recently by a joint meeting of representatives of the North Central Electric Association and the Minnesota Retail Hardware Association.

He urged that utilities wherever possible work through local or state association to enlist dealer support in their campaigns. He discouraged the idea of conducting missionary work to persuade hardware dealers to sell gas appliances, when they do not already sell them. He also expressed disfavor with the idea of loaning appliances to the dealer who does not stock them, and permitting him to sell on commission. Said Mr. Peterson, "That kind of merchandising simply muddies the water for the dealer who has made an investment in inventories and who is entitled to support."

Along this line he went on to say:

"Neither does the plan of selling such merchandise on ridiculous payments and allowing the dealer to turn the installment paper over to the utility, appeal to me. I don't believe utility-dealer programs should take the form of wet nursing. If the dealer hasn't the capital to engage in the appliance business he is better off out of it—and so are other dealers who are capable of handling the business."

The gas company's golden opportunity, in the opinion of Mr. Peterson, lies in the fact that even the dealers who are logical outlets for gas appliance merchandise need constructive advice in the management of their appliance departments. Local gas company managers or commercial men should regard themselves as sales managers for all of the gas appliance outlets in their communities.

Mr. Peterson related his experience in reviving the gas range business of a central Indiana hardware store which at the outset was stocked with obsolete models, the employees lacking knowledge of even first principles in gas range selling. His steps in order were:

First, a new line of ranges was added, modern in style and utility.

Second, a sample of each model was connected for demonstration. The necessity for this should be preached by every utility, said Mr. Peterson—both because it sells ranges and because it adds another gas customer.

Third, a fixed rate was established with a local plumbing concern for connecting ranges, so that prospects could be quoted installed prices.

Fourth, manufacturer's salesmen spend some time with the floor force going over sales points of each construction stocked, and giving information on competitive models.

Fifth, stoves were placed in a special section of the store, using a U shaped arrangement which closed one end of the aisle, concentrating the prospect's attention and preventing distraction by other employees or customers during demonstration. Mr. Peterson also recommended having at least one range display at the front of the store.

Sixth, a sane plan of installment selling was adopted, window displays were used freely, and local newspaper advertising was employed.

Starting from scratch an active range business was built in an incredibly short time, and Mr. Peterson pointed out that the same opportunity exists in thousands of towns today where dealers are stocking ranges but do not know the necessity of taking the simple steps outlined above.

To properly inform them is the utility's opportunity and responsibility. Where this is properly discharged, to quote Mr. Peterson, "the people of that community are going to become gas conscious, criticism of utilities is going to diminish, company records are going to make a better showing, and a new, more promising day will have dawned in the appliance merchandising field."

Cooperation *with* Steam Fitters

IN the Chicago area cooperation between the Master Steam Fitters Association and the Peoples Gas Light and Coke Co. has been resultful in mutual business, and Louis Braum, secretary of the heating contracting organization, brought some of the background of these pleasant business relations before the Mid-West Conference.

Mr. Braum told of earlier days in Chicago's heating industry when speculative builders erected homes for summer sale, leaving the owner to discover that the heating system was inadequate. Heating contractors were serving this trade on a price basis, ruining the future of their business. The answer was the development of "Certified Heating" by the Master Steam Fitters Association, and today 150,000 buildings in the city are known as "Certified Heating" installations. Standards governing installations are enforced upon Association members through field inspection, and owners receive adjustments without cost in case jobs are not up to prescribed standards.

Some of the further accomplishments of the Master Steam Fitters Association are the establishment of net load ratings for heating boilers, and creation of the Steam Fitters Apprentice School for young men.

Mr. Braum urged for use of every sales factor in business extension, pointing to the 33,000 heating contractors in the United States as a potential part-time sales force to preach home heating by gas. Contractors need education in gas heating, which the gas company should supply. "Why not create a committee that would formulate a sales training course for contractor groups?", is the speaker's pertinent question.

In Chicago, heating installation costs have been standardized through cooperation; conversion burners are installed at a fixed price, and the same is true for various sizes of gas boilers. This practice has simplified accounting, given salesmen definite cost data, made installation estimates from contractors unnecessary, and aided quick closing of sales.

On the subject of utility merchandising Mr. Braum had this to say:

"We contractors realize that of paramount importance to utilities is the necessity of keeping open the opportunity to build gas load. Chicago heating contractors favor the sales policy of our local gas company and feel that the utilities must continue to merchandise appliances if they are to have gas load. We have no desire to interfere with the merchandising policy of the utilities, but are glad to cooperate in the sale of appliances. We know that contractor and labor good will has a definite value, as was demonstrated this past year when legislation was proposed prohibiting the sale of appliances by utilities in our state. Without solicitation by the utilities the voice of the heating industry was heard in opposition to the proposed legislation.

"We do not wish to preach, but would like to venture the opinion that if, in other states, the same consideration had been shown by the utilities to the contractors and labor as has been shown by nearly all the utilities in our state, there would be less legislation to embarrass the sales efforts of the utilities. I commend this subject to your earnest attention."

Need for a plan which would enable utilities to finance contractors' sales was indicated by the speaker. Adherence to cash terms has limited the contractor's market in this period of time-payment purchases, in spite of the fact that he is selling to homeowners, with equity in real estate for security. Heating contractors today, said Mr. Braum, are getting less percentage of the buyer's dollar than they did 15 years ago. Time payments and team work with utilities would help to correct this condition.

What Worth . . . Space Heater Load?

THIS Mid-West Conference paper, by E. C. Adams of Adams Bros. Manufacturing Co., was a reasoned appeal that gas companies give due consideration to relieving the present condition of the space heater industry. The downward trend in space heater use per customer, which began to become noticeable about 1927, naturally gives manufacturers extreme concern, while utility companies are failing to realize upon revenue possibilities in this field. Summing up the present, Mr. Adams stated that unit sales in 1932 were no more than 30 per cent of a normal year; that average prices were about 30 per cent of a safe basis; that the combination of low price and unit volume produced a dollar volume about 10 per cent of normal. This essential branch of the industry is in a position of forced extreme economy, stated the speaker, and new developments will necessarily wait upon some promise of renewed sales activity.

E. C. Adams

Analyzing the factors which have produced this situation, Mr. Adams noted a misconception which has come about due to use of the term "auxiliary heating" in connection with space heaters. He pointed out that in most cases space heaters are not auxiliary to others forms of gas heat—they are auxiliary to a competitive fuel, and thus are earning the revenue that is available for gas. They are major units where revenue is concerned. In this connection he pointed out that in 1929-30-31 natural gas domestic customers consumed over four times the heat units per customer as manufactured, due largely to greater house heating use—about 50 per cent of natural gas sales volume being in this class and 38 per cent of domestic revenue coming from this source. This revenue is divided about 70 per cent from space heaters and 30 per cent from central heating, according to Mr. Adams. He referred to the situation in Pittsburgh where in a normal year 9 million dollars, or 36 per cent of the total domestic revenue is realized from space heaters, this class exceeding any other division of appliances. Space heater manufacturers, said Mr. Adams, do not regard their product as competitive to central gas heating; however, they call the industry's attention to its revenue-producing status and strongly urge that the field be cultivated as it merits.

Destructive merchandising in the past has caused space heaters to be regarded as makeshift systems of heating, said Mr. Adams, this impression carrying even into the gas industry, to a point where sight of revenue-earning power of these appliances has been lost. Gas companies must visualize the manufacturer's activities as being their own sales department's activities, must lend a hand to curb the ill advised sales practices in this branch of the industry and pave the way to a new cycle of accomplishment in the space heater product and market. As it now stands, much potential gas

sales revenue is being lost; manufacturers are unable to develop their product; this essential manufacturing arm of the industry faces an acute need for cooperation in the form of constructive sales action.

Central Heating Sales Trends

MAKE a good, and a salable product; maintain its constant sale. That in brief is the gas appliance manufacturer's objective, said Lyle C. Harvey, sales manager of the Bryant Heater & Mfg. Co., to the Mid-West Conference. When left undisturbed to pursue this straight course the manufacturer is rendering maximum service to his industry, for he is constantly improving his appliance, keeping it salable, developing new products through unceasing research, conducting promotional work such as advertising and sales assistance. One present obstacle, which deflects the manufacturer from this course is a demand for special concessions to utility company buyers, summed up by Mr. Harvey under these heads:

Requests for lower and lower and still lower prices.

Requests for longer payment terms.

Requests for consigned goods.

Requests to take back old and second-hand and obsolete merchandise.

Requests to carry the customer's time-payment paper, etc.

Such items as the above naturally limit what the manufacturer can do in the way of research and sales promotion for the utility's benefit.

Mr. Harvey next dealt with the changing problem represented in the gas-heating prospect. Unemployment and reduced income complicate the selection of genuine prospects. Another phase of today's problem is that some gas companies have systematically worked their heating prospects until they are all in the repeat-call class, which represents added sales resistance if ordinary methods are used.

As one special sales weapon the speaker suggested that the story of gas rates be graphically illustrated, to offset some of the present sales resistance and add a true understanding of automatic heating, showing downward trends of rates. By illustrating oil prices similarly it may be shown that they are at bottom levels and that future oil trends must be upward. A 1- or 2-cent increase in oil prices would give gas the competitive advantage in many areas. Oil burner replacement charges should also be stressed in competitive selling, since this depreciation item in the yearly cost will make a radical difference in fuel comparisons. Present day conditions demand also that any quality product, such as gas heating, present its superior features so forcibly that prospects cannot escape them.

Supervision of sales effort was discussed with particular respect to why possible sales are sometimes lost. Salesmen lose sales, said Mr. Harvey, because they:

1. Lack enthusiasm and confidence.
2. Lack knowledge of their product.
3. Lack knowledge of prospect and his needs.
4. Are not able to handle questions and objections.
5. Pick a bad setting for the sale, when prospect is busy, etc.
6. Are unable to overcome price feature.
7. Are unable to picture profits or benefits strongly enough.
8. Do not know when or how to ask for the order, or are afraid to attempt close.
9. Lack prospects of proper quality.
10. Are of low morale due to inadequate training, inspiration, direction.

It is essential to know what kind of story the salesman is telling these days, for with fewer real prospects it is doubly harmful to lose potential sales.

Over-All View *of* Refrigeration

GAS refrigeration prospects for 1933 cannot be considered apart from the electric refrigeration picture, so H. H. Wampler, assistant sales manager of Faraday Refrigerator Corp. dealt heavily with the latter theme in his Mid-West Conference remarks.

Beginning its volume sales in 1925, when an estimated 75,000 refrigerators were sold, this virile industry has put 4 million units with a sales value of over a billion dollars, into service. The peak year thus far was 1931, with 950,000 units sold; the estimate for 1932 is something over 750,000 units.

On the basis of wired homes it is estimated that less than 20 per cent of the electric refrigeration market has been reached; 1933 will see determined concentration on the remaining four-fifths.

It is the concensus of opinion among manufacturers that the public is more conscious of the advantages of automatic household refrigeration, and more eager to secure this type of equipment, than ever before; sales will come in volume in 1933, where proper effort is applied.

Manufacturers have flocked to refrigeration, due to the sales record of the industry during the 1930-1931 period. Turnover of firms in this field has been large, more than 150 of them having either ceased manufacture or having been absorbed by other concerns. These many changes in manufacturing organizations and product are making the public interested in buying from established organizations, from which permanent and adequate service may be secured—a situation which should react to the advantage of the gas refrigerator. Competition will be intensified in certain cities due to some electric manufacturers seeking to dispose of distress merchandise produced due to the above conditions.

The electric refrigerator load accounted for more than 13 per cent of the total domestic revenue of electric utilities in 1931—it out-earned any other one appliance. Electric utilities will redouble sales efforts this year.

The gas refrigerator industry has made a commendable showing since its entry in 1925—now selling approximately 10 per cent of the annual volume of total household refrigerators. With a few exceptions, sales have been through gas companies. The product is good, is sold by organizations in which the public has confidence; gas refrigeration will continue to go ahead in 1933.

▼

Dallas Meeting

MORE than 200 gas sales executives and merchandising men attended the third Southwest Natural Gas Sales Conference, in Dallas, Texas, February 24 and 25. C. K. Patton, commercial manager of the Dallas Gas Co. and chairman of the Council in charge of the Conference, acted as chairman of the meeting, A. E. Higgins, secretary of the Natural Gas Department, represented the A. G. A.

A. E. Higgins

The value of promotional gas rates, the advantages of a salary instead of commissions for gas appliance salesmen, the need for thorough survey of customer's gas equipment, and the necessity for educating employees on the sales advantages of gas equipment through installations in

their own homes, were stressed as important features of the two-day program at the Baker Hotel.

J. V. Strange, vice president of the United Gas Public Service Co., Houston, on behalf of the National Directing Committee of Executives spoke at the opening meeting, recommending a four-point program for general adoption. This included a thorough survey of gas customer's homes with an immediate follow-up in adjusting customer's appliances; an intensive educational program to teach gas company employees the benefits and sales advantages of gas equipment; a revision of merchandising policies so that all gas companies would sell only the highest standard lines of gas equipment; and finally, the installation of promotional gas rates.

The plans of the Community Natural Gas Co. in changing from bonus selling and commissions to group selling by employees in competition with other divisions and districts of the company were outlined by Chester L. May, vice-president of the Community Natural Gas Co., Dallas. Mr. May also told of the company's experience in replacing a flat rate in many of their towns with a sliding scale rate, allowing a reduction in commodity charge for gas in the lower brackets of the rate.

During the first session, Capt. Higgins called particular attention to the fact that in most schools in the Southwest, the kitchens are equipped with obsolete gas equipment which is giving inadequate service. He urged members of individual gas companies to investigate equipment of schools in their territories, to replace obsolete equipment with up-to-date gas ranges and water heaters if possible, and to offer services of their home service director to home economics departments in high schools and colleges. Urging members to bear in mind that their chief concern is selling gas service, which is dependent equally on adequate supply of gas and proper gas equipment, Frank L. Chase, vice-president of the Lone Star Gas Co., Dallas, gave a brief talk at the close of the first session. He also expressed the belief that a change in the form of gas rates generally in use is necessary.

A number of other Southwest Conference features appear in the abstracts which follow:

Sales Program *for* Central Heating

A. W. LORDAHL of the Surface Combustion Corp. began his remarks on central heating at the Southwest Conference by demonstrating that an ample market exists in the Southwest and border states. Table No. 1 reports the potential field shown, based on number of dwellings in towns of 1,000 population or over, degree days, and average home characteristics in each district.

A. W. Lordahl

Taking 25 per cent of this market as the conservative expectation for gas central heating, gas being available at inducive rates in most of the territory in question, it appears that 426,790,000 therms of annual house heating load is within reach in this section—which would more than double the present domestic gas market.

The speaker gave considerable importance to laying the way for year-around air-conditioning by stressing central warm air heating sales at the present time. Cooperation with architects and builders, to sell them in advance on the all-year service of gas through central heating and summer cooling and dehumidifying, is highly desirable. Forecasting this trend will hold future load for gas, said Mr. Lordahl.

In setting up a comprehensive sales program for central heating the following outline of primary factors was offered:

(1) Gas company management relationship to program firmly established.
(2) Correct market analysis made.
(3) Correct budget structure decided upon.
(4) Correct sales organization drawn up.
  (a) Supervision
  (b) Personnel
    Salesmen
    Engineers
    Inspection and Service
  (c) Education of personnel
  (d) Compensation of personnel
  (e) Sales routine
  (f) Sales tests
  (g) Advertising program
(5) Good will maintenance of present customers.
(6) Correct coordination of inter-company departments.
(7) Correct inspection and servicing.

Dealing with individual points in the foregoing outline, he stressed the function of management at the outset of central heating sales, in adjusting facilities to handle house heating load properly, setting up inducive rates in line with local competitive conditions, creating adequate budgets for realization of markets, establishing adequate inspection and service departments.

Under the head of budgets the speaker called upon managements to determine how much new revenue is worth to their companies. Some companies feel that a new business expense of $1.00 to gain $1.00 in new yearly revenue represents good business practice.

Under the head of merchandising heating equipment the speaker recommended that engineering and selling phases be separated, so far as possible, leaving the salesman the primary job of selling the idea of automatic gas heat in terms the prospect can understand.

TABLE NO. 1

State	No. Dwellings in Towns Over 1000 Population	Estimated Yearly Heating Sales If Every House Is Sold Gas (In Therms)
Arizona	42,830	27,610,000
Arkansas	105,678	104,260,000
Colorado	125,787	263,160,000
Kansas	206,957	371,740,000
Louisiana	193,845	83,230,000
Mississippi	97,271	60,760,000
New Mexico	31,078	53,360,000
Oklahoma	206,641	259,840,000
Texas	566,259	346,340,000
Utah	67,369	136,860,000
TOTAL	1,643,735	1,707,160,000

Salesmen's compensation came in for comment, the combination salary and commission plan being favored. The tendency in some companies today to curtail or eliminate basic salaries in the sales departments was decried, and examples given where former producers had lost their sales punch in the face of this condition.

Retaining the house heating load is just as important as selling it in the first instance—more so, since the original buyer will influence perhaps 10 additional prospects. A survey by the oil burner industry showed that 41 per cent of new sales leads resulting in actual sales came from satisfied users. The moral is that service is all-important, and the advantages of central gas heating should be kept before the home owner after he has purchased.

Space Heater Sales *and* Service

IN THE Southwest more than half of the domestic heating revenue is produced by space heaters, said Vernon R. Brown of the Lone Star Gas Co., Fort Worth, in the course of his Southwest Conference message. Far too little effort is spent by gas companies in perpetuating and adding to this load, in proportion to its importance. The space heater has broad acceptance, in a market stratum which cannot be reached by central heating.

He cautioned against the practice sometimes resorted to by salesmen in pushing other types of gas heating, of knocking the space heater. This breaks down customer satisfaction. A practical step every gas company employee could take is to see that all space heaters in homes which he enters are working properly; urge his friends to keep their heaters cleaned out, avoid use of rubber tubing, keep their heater flames at proper heights, ventilate their rooms by dropping the windows slightly when space heaters are unvented, install a little weather stripping to eliminate drafts, close the ventilators in the house foundations to make floors warmer, run vents between house studding for key space heaters. All of this would tend to keep gas space heating sold in the home which cannot afford more expensive equipment.

General acceptance of the A.G.A. Laboratory seal by merchants and the public is gratifying to the gas industry, but it brings a responsibility. A space heater with a Blue Star is expected to be a good heater—but undersize piping or poor adjustment may lead to dissatisfaction and discarding of this good equipment, when a larger heater or a rearrangement of old heaters would give comfort. Properly adjusted space heaters give clean, odorless heat, and their economy has a special appeal today.

Water Heater Sales Trends

A. M. Apmann of the Cleveland Heater Co. called to the attention of the Southwest Conference a number of current ills which are handicapping water heater manufacturers. He condemned the practice of manufacturing heaters under names coined especially for individual utilities or jobbers, stating that in the final analysis a manufacturer can continue in business only by customer acceptance of his trade name or company name. On this point Mr. Apmann had the following to say:

"With the Blue Star of the Testing Laboratory as a background and the local utility acting as distributor or retail outlet, the use of a special trade name can add nothing to the value of the appliance. It does, however, handicap the sale of the same appliance in the outlying territories where a different retailer may be selling it.

"When the trend of water heater selling has been coordinated so that in each territory the products of a single manufacturer will be sold alike by all the outlets under a single name, real progress will be made and far better results achieved."

Another obstacle facing the manufacturer is the insistence of some utilities that accounts be carried over long terms. Abundance of unused credit available today and the stable organizations specializing in financing household appliance sales should make it unnecessary for manufacturers to engage in this financing.

Price cutting came in for the speaker's comment. Price cuts do not tap new markets, said Mr. Apmann, for purchases out of excess or marginal income are made deliberately; with less marginal income fewer sales will be made, regardless of minor price shaving. Price cutting results in reducing manufacturers' sales promotional budgets.

Since the A.G.A. Testing Laboratory began functioning the appliance quality has been highly improved, said Mr. Apmann. The best appliance built prior to the Testing Laboratory is inferior to the poorest appliance which is now able to pass minimum requirements. However, a tendency is now noticeable to build appliances which will barely pass minimum requirements. Increase in requirements, particularly for storage water heaters, is advocated. Utilities and jobbers must recognize that only the best appliances will serve in meeting competitive fuels, and obviously, increasing quality means increasing cost.

The latter portion of Mr. Apmann's discussion gave an analysis of water heater trends as discerned in the approval records of the A.G.A. Laboratory. Indicating the effect of price appeal, he showed that the average recovery rate of tank heaters increased steadily up to January 31, 1932 and at that point dropped back to the 1930 level. Necessity of the industry's maintaining its stand for quality was stressed in this connection. The tendency toward reducing number of heaters and recovery rates to a point where service requirements can be adequately handled by circulating tank heaters or storage automatic heaters was acknowledged, with regret that it pointed toward gradual elimination of instantaneous types.

Obsolescence in water heater models was viewed with alarm, Mr. Apmann showing that practically one-third of the heaters only one year old are obsolete. This represents losses in distribution, and is a waste of development and testing expense. Manufacturers in many cases are encouraged to develop new models by utilities, when their subsequent use does not bear out the need for them.

Ideally, said Mr. Apmann, the manufacturer should provide utility and jobber with economically operating appliances suited to a range of needs, furnish adequate sales help and training of retail sales and service personnel; the utility should make surveys of its various classes of customers to determine proper appliances to be used on its lines. Close cooperation between manufacturer and utility in serving a known market will bring results.

Hold Range, Water Heater Loads

TO ESTABLISH a basis for his discussion of competitive factors C. A. Breitung in this Southwest Conference paper sets forth a few comparative statistics for the domestic gas and electric fields. Of the 29 million homes in the United States 16 million are using either manufactured or natural gas, 1,100,000 of the natural gas homes being located in the Southwestern states and virtually all of these having gas ranges. Of the total homes something over 20 million are wired for electricity, 3 per cent of the wired homes having electric ranges. The electric industry has sold half a million of its total 875,000 ranges now in use since 1928. Along with the 15 million gas ranges in use there are 6 million water heaters and 150,000 gas refrigerators.

C. A. Breitung

It is a challenge to keep the load we have, said Mr. Brietung, calling for the utmost ingenuity, bold development, and strong consistent sales effort. As a primary consideration to success he called for more thorough knowledge of appliance markets than the industry has had in the past. Careful, continuous survey of every consumer's premises must be carried on—and the resulting data to be of worth must be currently used.

Likewise, appliance servicing responsibilities must be carefully met, particularly for water heaters and ranges. Carefully prepared budgets must be set up for the sales work which will maintain the normal replacement market—a million and a half ranges a year—and sell the new market. The economics of first cost, installation cost, comparative life of appliances, operating cost and flexibility are entirely in favor of gas for cooking and water heating.

Mr. Breitung indicated a need for greater flexibility in the gas range and water heater, and development of supplementary equipment to build the domestic load. Style demands of the mod-

ern housewife must be continually met in gas equipment.

The domestic electric consumer now uses around $31 worth of power annually, the monthly bill being constant due to the balancing of winter lighting by summer fan and other load. This $2.50 average monthly domestic bill is due for gradual increase, by addition of load, (ranges, refrigerators, etc.) the electric industry having its eye on the day when the average customer will use $10 worth of its product monthly. Similarly the gas industry should look ahead to stepping up its sales per customer, much of this potential revenue being in the competitive classifications. To hold this field he urged the addition of gas-using heaters, toasters, percolators, incinerators, dryers, refrigerators, to supplement the basic range and water heater load.

Conversion Burner Sales

THE conversion burner is the answer to the problem of quickly adding gas sales, in the mind of W. Jennings Young, general sales manager of Oklahoma Natural Gas Corp., who treated this subject at the Southwest Conference. Many causes have combined to make increase in gross revenues imperative — the past two years of abnormal conditions have tightened competition in the fuel market; they have also brought utility rates into question and many unjustified reductions have been forced. Increasing gross revenues is the only solution.

W. Jennings Young

The modern conversion burner is thoroughly worthy of the gas industry's promotion, said Mr. Young, and makes sales possible to the prospect who will not or cannot undertake the larger investment in gas designed heating plants from which somewhat more economical operation might be expected.

Proper installations must be had in order to hold the conversion burner load. This is a problem in contact and education of agencies making the installations. Faulty burner installations, and "combination" furnaces operate to handicap the extension of this load. The logical prospects for conversion burners are already sold to central heating, and they know the inconvenience of solid fuels; moreover, as a class they have money to spend in improving their heating plants.

Mr. Young's paper went on to outline the Oklahoma Natural Gas Corp.'s "Gas for Home Comfort" campaign which added a large amount of house heating load. The campaign will be described in next month's issue of *Western Gas*.

Rental Sale *of* Gas Steam Radiators

POSSIBILITIES in the sale of gas steam radiators through the rental plan were outlined to the Southwest Conference by A. J. Belew of the Clow Gasteam Heating Co. Mr. Belew described a plan in current use by his own company, in part as follows:

At the beginning of the heating season of 1931-1932, the Clow Gasteam Heating Co. adopted a rental plan for their branches where sales were made directly to customers. The cities where the plan was offered to all customers with suitable credit references through the regular channels of advertising and salesmen's contact, were Amarillo, Dallas, Houston and San Antonio, Texas and Los Angeles and San Francisco, Calif. The plan was also used during the present heating season in several other cities, such as Atlanta, Georgia, and Jackson, Mississippi, where selling conditions seem to favor the rental plan.

The regular time payment deliver only selling price is used as a basis from which the rental terms are calculated. The year's rental adopted by the first gas companies making use of the plan was one-fourth of this purchase price and the monthly rental was divided into payments and billed during the months when heat was normally required in the territory. In the North the yearly rental is usually divided into 7 monthly payments. In the South the payments are generally for 5 heating months. Some of the gas companies that have more recently adopted the plan have established the yearly rental as one-fifth of the deliver only time payment purchase price with monthly payments corresponding with the heating months.

The installation charge, which is generally set at the average installing cost, is collected separately at the time the orders are taken. The expense of unusual installations requiring more time than the average figure established for this purpose is estimated at the time the orders are taken and is charged for in accordance with the extra amount of work.

A common feature of all rental plans used provides the customer with the privilege of purchasing the radiators at any time he elects, with full credit for the rental paid during the first year and with slightly decreasing credit on the second subsequent year's rental payments.

Many advantages for both the merchandiser and the customer have become apparent as the rental plan has gradually been put into effect under various classes of conditions throughout the United States. During the last two years the rental plan has been used by gas companies and by the Clow Gasteam Heating Co. to counteract as much as possible the decreased buying power and general reluctance of prospective purchasers against obligating themselves for substantial sums of money. The small amount of immediate cash outlay on the customer's part in connection with the rental contract in contrast to an outright purchase even on an extended time payment purchase contract, has resulted in far less deliberation on the part of customers.

The rental plan has allowed salesmen to interview and close orders amounting to several times the volume possible when outright sales only are attempted. The rental plan seems to offer far less resistance from customers than even a long time purchase contract, or free trial installation. Many customers regard the latter as only slightly less obligating than an actually signed contract, whereas according to the terms of a rental contract, the customer is never obligated beyond his immediate outlay in cash. The first payment amounts only to the cost of the installation and one month's rent. If at any time after installation the customer decides not to continue the use of the equipment, it is removed and th contract cancelled. *(For additional Sales Conference papers see page 18).*

A. G. A. Standardization of Printing Sizes Accepted by Utilities

The American Gas Association's committee on the standardization of printing sizes has found its recent recommendations accepted by a large number of utilities and manufacturers.

Size recommendation for sales sheets, sales bulletins, price lists, etc., is 11 inches by 8½ inches.

Eastern Meeting

THE Eastern Natural Gas Regional Sales Conference was held March 2 and 3 at Hotel Shenley, Pittsburgh, with B. H. Gardner, Columbia Engineering and Management Corp., presiding as chairman of the Council in charge. Approximately 200 attended. Mr. Arthur Hewitt, president of the American Gas Association, in the opening address discussed competition engendered by the depression and urged the maintenance of advertising and sales expenditures. W. H. Hodge of the Bylesby Engineering and Management Corp., recommended local advertising activities rather than national to meet the industry's needs. E. M. Tharp of the Ohio Fuel Gas Co., cited the sales problem as the biggest one before the industry, stating that a good sales job is the best method of solving public relations, rates, and financing problems which are current. Leo. A. Green, secretary-treasurer of the Steam Fitters and Helpers local union at Pittsburgh, emphasized the necessity of using skilled trades in gas appliance installation. Several speakers described methods for increasing efficiency of customer's equipment as a means of holding business. Among the digests which follow are several of the significant papers from the conference.—*Editor.*

B. H. Gardner

Competition *for* Industrial Load

THIS subject covered by G. W. Turner of the Equitable Gas Co. at the Eastern Conference was limited principally to a discussion of the competition from small mechanical stokers, in the building heating, bakery, process steam and home heating fields. Strained economic conditions have given the economy appeal of these stokers unusual acceptance. Sales appeal of this equipment has featured the following:

1. Savings—overall savings of 50 to 75 per cent of the gas bill are claimed.

2. Automatic operation—claimed comparable to gas installations.

3. Comparative fuel costs stressed—coal at present prices runs from 20 to 40 per cent of the natural gas bill, coal prices being 50 to 60 per cent of the 1927-1929 level.

4. Payments for stoker equipment are taken out of savings in gas bill, and spread over long periods.

5. Associated items of heating costs are minimized by stoker salesmen—labor for shoveling coal into stoker hoppers, breaking up clinkers, etc. passed over lightly on the theory that regular employees can handle without addition to payroll.

The above type of competition is not to be underestimated. However, natural gas experience has always been that it is not necessary to meet coal prices on a B.t.u. basis to hold a reasonable portion of the commercial and domestic load. All items should be considered in a true comparative showing. Advantages of automatic gas heating must be constantly sold, to present users as well as new prospects.

Misrepresentations of stoker salesmen about their own equipment, and overall gas costs, must be brought into the open. Tendency to overheat, power costs (10 kw. hr. per ton of coal fired, by Perdue University tests), necessity for using good grade coals, are among factors which build up costs of using stokers. Stoker salesmen often lump in the gas used for cooking and water heating, in the fuel costs which they use for calculating stoker savings.

Mr. Turner advocated use of unusual methods to combat this competition, stating that stokers are with us to stay and would have come forward even if present business conditions had not arisen. Our present attitude toward this competition will determine future success against it. Suggested aggressive sales activities against it are:

1. Analysis of existing load and future market.

2. Adequate staff of special central plant heating representatives.

3. Special attention to present inefficient gas jobs. These are our weakest point of attack.

4. Special promotional advertising.

5. Utilization follow-up service. Take the initiative in checking and constantly maintaining a central heating equipment in efficient operation.

6. Promotion of better designed equipment.

7. General use of natural gas publicity.

In addition to the above traditional efforts, which should be redoubled, the speaker presented several suggestions for out-of-the-ordinary sales tactics, for the Conference's discussion, among them:

1. Liberal merchandising of power burners, gas boilers and conversion burners. Replace inefficient equipment, or sell new equipment, by the stoker salesman's own type of offer—taking payments out of savings on former bills.

2. Use of stoker-competition-slanted advertising and promotional literature.

3. Complete gas heating service for larger installations. Building owners, etc. are interested in heating comfort and convenience—not what fuel they are using. Why should not the gas company install its equipment in the present boiler room, agree to operate it over a period of years and sell the customer steam measured by a suitable condensation return meter? This would relieve the owner of all worry, and would go beyond anything stoker competition is attempting at this time.

4. New method of heating bake ovens and special utilization research. It is quite conceivable that a more efficient method of heating brick bake ovens can be developed.

This is no time to be smugly content that broad fields of expansion await our heating market due to the exclusive merits of gas fuel. If the industry does not delay in using aggressive promotion, its chances for expansion in this field are excellent. Jobs which have already been lost to this competition—and they are not few—must be replaced; having done this we are ready for real expansion with return to normal times.

Sales Plan *for* Central Heating

C. E. BENNETT, president of the Binghampton Gas Works, Binghampton, N. Y., brought to the conference a description of house heating load development on his company's lines, following adoption of mixed gas service last year.

Natural gas had been used for two years previous, for enriching. Change was made to an 850 B.t.u. basis, 80 per cent natural gas and 20 per cent blue gas. Rate structure was suitably redesigned, and the therm basis of billing adopted. Changeover was completed at a total cost of $1.92 per customer. Some of the high points of the campaign practice follow:

Past experience had indicated necessity for a definite guarantee of heating cost estimates. Customers signing contracts for installation of heating equipment were therefore given gas heating estimates and written agreements that actual costs would not exceed the estimates by more than 10 per cent, the company to remove equipment and refund purchase price upon written notice in case costs exceed above. The customer thus assumed only the cost of the gas. Down payments of $25 on the equipment were required for conversion units, monthly payments of $5 starting in October and continuing to April; beginning with April $10 monthly payments were required, these being reduced again to $5 in October.

Tax rolls were used to develop a suitable prospect list, owners with property assessed at $5,000 or more being included for canvassing and direct-by-mail. Ten calls a day were required of salesmen in addition to follow-ups on live prospects. *(Continued on page 25)*

ROLL-CALL OF 1932 LOAD-BUILDERS

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SALES executives of several gas companies which are notable for their consistent sales promotional programs have selected the leading 1932 load-builders on their staffs for comment in this section. A number of gas appliance dealers whose 1932 efforts were unusually productive in adding new load to company lines are also prominently mentioned. This feature of the present issue is a fine tribute to the sales work done by these individuals during the conditions existing last year. It is also a composite record of the type of direct selling methods which will add gas load in 1933. "Western Gas" acknowledges the cooperation of the various sales department heads who have submitted this information for publication.—Editor.

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Topeka Buyers Like Ready Service

FRIENDLY service still helps get orders—in good times and bad, alike. C. C. Young, of Capitol Gas and Electric Co.'s new business department stresses this service angle in his comments on the Topeka company's leading 1932 load-builder:

E. C. Cooper

E. C. Cooper, star salesman of the Capital Gas and Electric Co., of Topeka, Kan., demonstrates the smile that brings orders in good times or bad.

Mr. Cooper typifies the type of salesman that has been most successful when orders are hard to get. He gains the prospect's confidence by being of real service in solving the customer's problems. His coat pocket sags from the weight of the ever-ready plier and screw driver which are used to adjust the customer's gas appliances during the interview.

That people appreciate this friendly service, is proved by the sales record which shows $12,700 installations to his credit in 1932 on a territory that has been very intensively merchandised for seven years.

Tribute *to* Seattle Load-Builders

SEATTLE Gas Co's. outstanding salesman in 1932, measured by all-round results, comes from the company's Industrial and Commercial Division in the person of Claude O. (Dinty) Moore. J. Earle Jones, commercial manager of the Seattle company, has the following to say about his champion load-builder's work last year:

Claude O. Moore

Dinty Moore was given a monthly quota in merchandise sales of $850. As many commercial and industrial sales are made through dealers and jobbers, it is assumed that about one-half of the merchandise volume is found in trade channels outside the gas company. When the final count was taken for 1932, Dinty Moore showed orders billed amounting to $11,378.45, or an average of $948.20 per month.

While Dinty is very modest concerning his own ability, coming as he says from the school of hard knocks, he ascribed his success in selling to four factors: (1) Confidence in his own ability to do the job. (2) Believing that to receive he must also give in good service. (3) Constructive planning of sales work so that prospects come up regularly for final decision and closing. (4) Hard work.

The sales force who know Dinty best say that he practices what he preaches.

SEATTLE GAS CO. also pays tribute to the load-building efforts of the Standard Furniture Co., one of the most representative dealers in gas appliance sales on its lines. L. M. Ryerson, manager house furnishings department, who is thoroughly sold on modern gas appliances is largely responsible for this dealer's success.

The following letter was recently received from Mr. Ryerson by Mr. Jones of the Seattle company:

"We want to give expression to our appreciation of the splendid way in which you have co-operated with us, which is represented in increased sales.

"The successful selling of appliances using manufactured fuel is dependent upon the spirit of co-operation that is extended by the utility manufacturing the fuel product.

"Modern cookery as applied to gas and which is developed to the highest degree by the manufacturers of . . . . . ranges, combined with the feature of cleanliness and simplicity of gas usage, and the influence of the economic cost to the consumer, are the strong points which are stressed in our sales arguments and have and are proving resultful in the satisfactory merchandising of gas appliances in our House Furnishings Department.

"There is no question but the demonstrations of gas for home fuel purposes, through cooking schools and factory demonstrations, create women's interest which when properly followed up develop into sales.

"We are pleased to extend this voluntary expression as we feel that the service rendered us by your company is entitled to this consideration."

Yours very truly,
Schoenfeld's Standard Furniture Co.
L. M. Ryerson (Signed)
Manager House Furnishings Dept.

Builds Dealer Refrigerator Sales

MANY salesmen on gas company payrolls did important load-building through dealer channels in 1932, as the industry redoubled its efforts to utilize every outlet for gas appliances. F. M. Banks, general superintendent of sales for Southern California Gas Co., Los Angeles, calls attention to unique work done by a member of his staff through plumber dealers:

The activities of W. J. Miller, plumber-dealer representative of the Southern California Gas Co., have resulted in the establishment of 54 Los Angeles plumbers as Electrolux refrigerator distributors in the metropolitan Los Angeles area.

During the year 1932 these plumbers assisted by Mr. Miller, were responsible for the sale of a total of 162 Electrolux gas refrigerators. This volume of business earned for these plumbers commissions totalling $2640.51. Whenever a plumber sold a refrigerator, the Southern California Gas Co. awarded him the installation and drain connection work, and during the year 1932 the above group of plumbers were paid a total of $3614.91 for this work. One plumber alone earned $872.42 in commissions on Electrolux sales, which clearly indicates the money-making possibilities of the dealer plan the Southern California Gas Co. has offered to the Los Angeles plumbers.

ROLL-CALL OF 1932 LOAD-BUILDERS

Much of the success of the dealer plan is directly the result of the efforts of W. J. Miller. The cooperation of the Association of Master Plumbers has also been of considerable assistance to the gas company in putting across its Dealer Refrigerator plan.

Mr. Miller, upon selling a plumber a display refrigerator, follows up the sale by giving the plumber a thorough and intensive training in the most productive methods of selling gas refrigerators. This instruction has been followed up with periodic group sales meetings, where various phases of refrigerator construction, operation and selling technique are discussed.

The plan used in 1932 proved highly successful and will be continued during 1933. Mr. Miller expects 1933 to be the best year to date for Dealer Electrolux sales, and has established a firm foundation which should produce a substantial increase in Plumber Dealer refrigerator sales.

How So. Counties Ace Gets Results

"FOUR times as many calls on the part of the salesman, four times as much energy in the sales talk plus additional advertising selling helps and encouragement from the management, will enable the gas appliance salesman today to do a satisfactory selling job for his company," declares Sidney E. Ledbetter, one of the outstanding sales aces of the Southern Counties Gas Co., Los Angeles, Calif.

Sidney E. Ledbetter

Mr. Ledbetter, according to Clyde H. Potter, commercial manager of the company, over a period of years has consistently ranked in the higher brackets in maintaining a sales volume. Although his sales have declined somewhat during the past three years, they are still outstandingly high in comparison with the majority of gas appliance salesmen.

Mr. Ledbetter has made a specialized study of gas appliance selling. Fifteen years of experience has given him an intimate knowledge of practically all types of domestic gas appliances and what each appliance will do in the home.

Mr. Ledbetter takes the attitude that the gas appliance salesman employed by a utility is in business for himself, the company doing all of the installation work, collecting and advertising, and permitting the salesman to devote all of his time to the creation of new business.

Sincerity, according to Mr. Potter, is the outstanding characteristic which enables Mr. Ledbetter to continue month after month as an ace salesman. He does not over-sell, exaggerate nor praise his equipment so highly that the buyer will be disappointed in the operation of the appliance. This enables him to retain the friendship of each of his purchasers to the end that not infrequently many sales are directly traceable to enthusiastic users of his equipment.

He knows his territory, can at any time tell when and where sales are due. He maintains a file of all sales made in his district and generally speaking knows when an appliance should be replaced.

Mr. Ledbetter's territory includes a desirable section of Santa Monica Bay where the homes range in value from $5,000 to $50,000. He points out that it is much easier to sell to the less pretentious home than to the wealthier homes for the reason that in the latter it is in many instances impossible to approach the owner. Selling to these wealthier buyers must of necessity be accomplished through the butler, maid or cook or other servants of the home, which makes it extremely difficult for the salesman to get his message to the buyer. In these homes, says Mr. Ledbetter, the salesman can merely suggest what piece or type of equipment might be used. Any suggestion of high pressure salesmanship is entirely taboo and practically no sales can be made on the first call. This means continuing to cultivate the butler and cook and through them the house owner until a favorable desire to purchase has been built up.

Indicating that Mr. Ledbetter overlooks no bets, Mr. Potter states that this consistent load-builder watches the local daily press to keep abreast of social events which may lead to sales. He knows when a family leaves his territory and when another family moves in, when a consumer leaves on a vacation and when he is to return. He makes it a cardinal principal to call back two or three days after each installation. He wants to know how the appliance is set and assure himself that the new owner is entirely sold and satisfied on the particular piece of equipment.

"The customer appreciates this call back on the part of the salesman," explained Mr. Ledbetter. "The owner feels that you are still interested in his welfare and is very glad when you take steps to correct any defect which may be found in the stove or appliance. In this manner I obtain many new prospects because each of my satisfied customers can do a great deal for me in closing another sale."

Because of Mr. Ledbetter's intimate knowledge of the purchasing power of his territory and his ability to determine when a customer is ready to buy, he has been signally successful in moving obsolete models or other appliances on which the company has for various reasons placed special prices. When he learns of a particular bargain he seems to know exactly where to place the appliance.

On the special sales problem for 1933 Mr. Ledbetter has this to say: "The job of the appliance salesman today is to locate certain groups of buyers whose incomes have been least affected by the depression. Certain professional people, school teachers and other groups have had few or no salary cuts and will buy necessities if the appliance salesman can show where money can be saved in so doing. I therefore spend my time only on those people whom I know to be in a position to buy. For the man who will pursue this course, who will treat his buyers as they like to be treated and who will not hesitate to devote a considerable portion of his efforts to night selling, 1933 will be a satisfactory year."

Portland's Leading Load-Builders

J. H. MANNING was the high man in sales for the year 1932 for the Portland Gas & Coke Co. New business department manager John H. Hartog attributes at least part of Mr. Manning's success to the fact that he quickly adapted himself to the times and used the depression as an argument for sales. He talked the language of his prospects, sympathizing with them and selling them first, on the idea of new appliances and secondly, on taking advantage of the depression by buying at the low prices.

ROLL-CALL OF 1932 LOAD-BUILDERS

Like all consistent sales producers he is found to be one who never gives up. For a number of years he has been among the leaders of this sales organization.

He makes constant use of the Portland Gas & Coke Co.'s Dealer Co-operative policy in locating bargains in gas merchandise for customers who cannot buy merchandise of the higher price levels as carried by the gas company. He realizes that he can find a suitable gas appliance at a suitable price for every prospect.

J. H. Manning

By diligent work and confining his talk to his business he has led the field as load-builder. Recently for instance, a rooming house needed a lot of radiant heaters but the lessee could not afford them nor could the owner make the investment with the low rents he was taking. Mr. Manning scoured the city and located three second-hand dealers who could supply the needed quantity, thus adding a nice househeating load to the company's business which otherwise could not have been obtained.

TO SINGLE OUT one dealer in Portland as outstanding in the merchandising of gas ranges would be very difficult. Each of the dealers has outstanding qualities.

One organization is deserving of special mention because of the fact they are facing what are seemingly unbeatable odds. This firm is Henry Jenning & Sons and they are fortunate in having at the head of their stove department a man who is exceptional in this line—Mr. Gilbert Noonan.

Mr. Noonan has the happy faculty of turning these adverse conditions until they are working for him. The firm, formerly located at one of the best corners of the city, moved into a new building ten blocks from the center of the shopping area, moved the range department from the second floor to the 7th floor, reduced the personnel from four persons to one, yet were in first place in gas range sales among 56 dealers in the Portland area. They do not sell cheap ranges; the average sales price is well above that of many other Portland dealers.

Too much credit cannot be given Mr. Noonan—a man who knows his business, is sold 100 per cent on his line, who knows how to sell and how to satisfy the customer. Having his department completely isolated from the other departments, keeping his customer from being detracted by happenings on the street, persons passing, busy telephone or other merchandise, has proven to be very beneficial.

A customer calling is given a thorough demonstration. The firm makes it a policy to ascertain the customer's needs and his ability to buy. They let the customer talk and let the customer make his own appraisal of the old equipment at the proper time. They are selling a real service—not selling just a range to make a sale. They have ample stock, properly arranged, plenty of space, not too crowded, yet with each class of range in a group.

They have a complete list of their satisfied users; they present facts and not sales talk. They know the competitors' merchandise. They have an enviable record for fair dealing. They have annual demonstrations by factory representatives. They have a successful follow-up campaign carried on at all times to persons whom they have sold ranges many years previous. They have had excellent success with their classified advertising and have advertised only real values.

Henry Jenning & Sons have a record of 228 gas ranges in the year 1932 in the face of keen competition on electricity and wood. This is truly a remarkable record.

Three Top Men Named *for* Denver

WHEN requested to give *Western Gas* a statement on the work of his outstanding load-builder for 1932 Roy G. Munroe, gas new business manager for the Public Service Co. of Colorado, consulted his three division heads and the result is three separate comments upon the top men in each of the respective departments. These are supplied through the courtesy of C. A. Bigler, superintendent domestic division; C. W. Gale, superintendent industrial gas, commercial gas and district steam heating division; and F. M. Chelf, superintendent house heating division. Here are the Denver company's chief business-getters for 1932:

J. F. E. CUNNINGHAM was the high man in the Domestic Gas Sales Division of Public Service Co. of Colorado for 1932. He started with the company August 25, 1925 and led the Division in 1929 as well as 1932 and has not fallen below fifth place during any year.

J.F.E. Cunningham

Mr. Cunningham feels it is most important to sell oneself first, that is, to gain the confidence of the people in one's territory. Also to believe implicitly in one's company and at all times keep the idea of revenue-building as the main objective. Automatic storage water heaters are his hobby.

The company's domestic M c.f. sales, not including 10,000 domestic house heating jobs, increased from 912,898 for 1931 to 930,745 for 1932, notwithstanding a decrease of some 300 meters.

TEMPORARY deceleration in business activity during 1932 couldn't put a four-wheel stop to Chandler Weaver, high man of the Industrial Gas Division of Public Service Co. of Colorado. Mr. Weaver not only sells industrial and commercial gas, but he also has charge of one of the company's three district steam heating sales territories. Mr. Weaver's production of additional load during 1932 in the above three classifications put him in first place for the year.

Chandler Weaver

His methods can't be the unstable, fair weather sort, for he still lands the orders. His division brought in 150,113 additional M c.f. during 1932, or an increase of 7.9 per cent.

According to Mr. Weaver he first familiarizes himself with all the general information on the prospect's industry that he can; then he picks that executive in authority most likely to be receptive to progressive ideas; and thirdly, and most important, he approaches the prospect, not as a salesman, but as a business man and a friend, able and willing to solve all the executive's problems incidental to the use of gas.

ROLL-CALL OF 1932 LOAD-BUILDERS

THE HONORS for househeating sales for the year of 1932 go to A. Roy Moore, district representative, who sold and had installed 32 complete househeating installations during the year. These 32 installations will yield an annual increase in gas sales of approximately 6,000 M c.f

A. Roy Moore

Mr. Moore's sales have always been made on such a sound basis that they are highly satisfactory to both customer and company. However, Mr. Moore not only sells househeating jobs on a sound basis, but he makes it a point to keep in contact with them after the sales are made. In addition to the sale of new jobs he has sold improvements in many cases to customers who are already using gas for heating. These improvements are likely to be warm air pipes or return air ducts on a converted furnace. In some cases a thermostat is sold where customer previously operated the heating plant by manual control. Often he has recommended and sold ceiling insulation, and weather stripping. In some instances the converted furnace or converted boiler has been replaced by the sale of gas designed furnace or boiler.

These results have been obtained by very hard and methodical work. His territory encompasses a moderate class of home and his sales last year were superimposed on a relatively large number of househeating jobs already on the line. He is a consistent canvasser and canvasses his entire territory nearly four times each year. His answer to the question as to how much a salesman should canvass is—"Canvass enough to keep yourself busy on appointments while you are not canvassing."

"We have men that are selling not only domestic appliances but men who are working in the commercial building heating field, hotel and restaurant field, and industrial field. For each of these a load building or revenue building quota was set. We had a total of 233 salesmen who attained or exceeded their quota.

"These men were honored guests at the annual banquet of the Sales Department in San Francisco the first of the year. As a symbol of outstanding contributions toward load building, a Blue Vase award was made at the conclusion of 1932 to any employee of the Sales Department, or any employee in any other department of the company, or to any dealer, who had contributed something outstanding toward the upbuilding of the company's business during 1932."

The following is a list of Blue Vase awards that were made:

R. T. Stephens, Sales Department, San Francisco
L. G. Hall, Gas Service Department, Sacramento
W. J. Lane, Gas Department, Stockton
M. Haugh, Electric Department, Auburn
L. J. Peterson, District Manager, Petaluma
Frank Sutter, Collection Department, San Jose
D. Smith, Gas Department, Chico
L. Greer, Meter Department, Marysville
L. W. Paul, Electric Department, Salinas

consider this a good record in the face of the present conditions and in view of the fact that heavy load-building installations, such as gas furnaces and house heating conversions are not sales possibilities in this climate.

In Shreveport, we consider water heaters, refrigerators, gas steam radiators and circulating heaters as major load-building appliances, and Mr. Parker's sales of an average of one water heater and one gas refrigerator for practically every week in the year is a record of accomplishment.

Mr. Parker employs no unusual tactics in making his sales; his methods are those of an intelligent salesman who is able to present his story in convincing detail because of his intimate knowledge of the appliances he offers the public. Here is his 1932 load-building record in detail:

Appliances	*Units*
Water Heaters	46
Electrolux	40
Gasteam Radiators	18
Circulators	6
Space Heaters	78
Ranges	34
Laundry Dryer	1
Ironer	1
Incinerator	1
Dollar value	$16,051.00

P. G. & E. Makes Special Awards

PACIFIC Gas and Electric Co. from among its several hundred salesmen and others contributing to load-building, selected a number for special recognition on the strength of their 1932 work. F. U. Naylor, manager of gas sales for the company, supplies the details:

Knows His Wares ... and Sells Them

Tom F. Parker

THERE is no magic in the way Tom F. Parker, top salesman in the new business department of Southern Cities Distributing Co., Shreveport, La., beats his quotas. Knowing his wares is one of the answers to why he is successful. W. J. MacIntyre, new business manager for Southern Cities, remarks as follows concerning Mr. Parker's 1932 accomplishments:

This company's merchandising activities have been considerably curtailed during the past 14 months and as a consequence the volume of Mr. Parker's sales is not up to 1931. However, we

R. E. Ritchie Sec'y.-Treasurer of Arkansas Utilities Ass'n.

Robert E. Ritchie, assistant to the president of Arkansas Power and Light Co., has been elected secretary-treasurer of the Arkansas Utilities Association, which is headquartered at Little Rock, Ark. The office was formerly held by Rex I. Brown when he was serving as manager of the Little Rock division of Arkansas Power and Light. Mr. Brown is now vice-president and general manager of the Mississippi Power and Light Co. of Jackson, Miss.

Vicious Utilities Act Gets Wyoming Governor's Veto

Wyoming's utilities act, passed by both Senate and House of Representatives (Senate Bill No. 42) was vetoed on February 14 by Governor Leslie A. Miller. It would have authorized mayors and city councils to acquire and dispose of gas utilities without putting this action before the vote of the people.

Henrietta Permit Sought

Ray Dawson, Oklahoma City, Okla., has applied to serve Henrietta, Tex., with natural gas from three wells which he owns at Hurnville.

Pacific Coast Gas Association

Managing Director: Clifford Johnstone
Association Headquarters:
447 Sutter Street, San Francisco

President: H. L. Masser
Vice-President and Executive Engineer,
Los Angeles Gas and Electric Corp.

A Brief History of the Association's Gold Medal

A GREAT deal of interest has been created by the announcement on this page in February that Certificates of Honor were being issued to holders of the Association's Gold Medal. This interest is very gratifying as it is an indication of the value and sentiment which is attached to this medal by its recipients and the high regard in which it is held by all Association members.

That special recognition be given to papers of special value and importance was first proposed by W. A. Aldrich, the Association's president in 1904. The late John A. Britton secured action on Mr. Aldrich's proposal at the 1905 convention by saying:

"The unanimous opinion of the Committee is that the Gas Association of the Pacific Coast should award such a medal . . . to be given to such a person as would present a paper of originality in its matter applicable particularly to the Pacific Coast and to this Association. . . . It is thought that it would promote a greater interest in the Association's affairs, and greater interest particularly to our own affairs on the Pacific Coast, and be an incentive to the members who have not yet awakened to the fact that they may become famous by contributing to the list of papers. Therefore, your Committee recommends that a Pacific Coast Gas Association Medal be instituted and awarded by the Committee named in any one year when a paper of original merit in their judgment has been presented."

The first Gold Medal was awarded in 1906 to E. C. Jones, the Father of the Pacific Coast Gas Association and its President in 1896 and again in 1915. In the 27 years which have elapsed since that first award the Gold Medal has been maintained as a reward for solid merit. A complete chronological list of Gold Medal winners is printed here for the inspiration and emulation of the Association's younger members:

E. C. Jones, 1906—The Story of the Restoration of the Gas Supply in San Francisco after the Fire.
E. A. Rix, 1907—Some Economics in High Pressure Gas Transmission.
John Martin, 1909—The Public Benefits Derived from Water Power Developments in California.
E. L. Hall, 1910—Chemical Control of Oil Gas Manufacture.
C. L. Cory, 1912—Reasonable Gas Rates and Their Determination.
L. B. Jones, 1913—The Manufacture of Gas from Oil.
C. B. Babcock, 1914—Gas Street Lighting.
H. R. Basford, 1914—Water Heating by Gas.
B. S. Pedersen, 1914—Domestic Uses of Gas.
H. P. Pitts, 1914—The Industrial Use of Gas.
R. J. Thompson, 1914—Gas Lighting in the Home.
S. C. Bratton, 1916—Up-to-the-Minute Selling Methods.
W. M. Henderson, 1920—The Use of Governors and Regulators in Gas Distribution.
R. M. Conner, 1924—Appliance Testing Code.
N. B. Drury, 1924—Making the Public Think About It.
R. S. Fuller, 1924—Comparative Cost of High and Low Pressure Distribution.
K. C. Tomlinson, 1924—Naphthalene Removal.
W. H. Barton, 1925—Employees' Relations with the Public.
C. R. Miller, 1925—Gas Appliance Installation and Service Manual.
J. E. Spelce, 1925—Naphthalene Removal.
K. N. Cundall, 1926—The Sulphur Recovery Process of Liquid Purification.
E. L. Hall, 1926—Gas Manufacture for Peak Load Conditions.
A. T. Kelly, 1929—Preservation and Destruction of Records (Committee Award).
R. A. Hornby, 1929—Fixed Capital Accounting (Committee Award).
Geo. L. Myers, 1929—Legislation and Taxation (Committee Award).
F. S. Wade, 1929—Initiation of First Pacific Coast Cooperative Gas Advertising Campaign.
R. E. Fisher, 1932—Leadership in Promotion of Harmonious Trade Relations in All Branches of the Gas Industry and Coordinating Dealer and Utility Interests by Establishing a Definite Foundation Upon Which These Allied Industries Will Hereafter Work in Harmony.
J. A. Harritt, 1932—Co-author with L. J. Willien and Frank Wills—High Heating Value Oil Gas as a Stand-by for Natural Gas.
R. A. Hornby, 1932—The Objectives and Funding of a Pension and Benefit Plan.
Frank Wills, 1932—Co-author with J. A. Harritt and L. J. Willien—High Heating Value Oil Gas as a Stand-by for Natural Gas.

Committee Awards

Ranking equally with the Gold Medal in prestige and value is the committee award, originated in 1928, in which the money equivalent of a Gold Medal is given to the chairman and a Certificate of Honor given to the chairman and each member of the committee. In addition to those noted above, in which the chairman received a Gold Medal, three committee awards have been made as follows:

R. A. Hornby, 1928—Undistributed Costs and Fixed Capital Ledgers.
Clarita Scott Holden, 1931—Women's Committee.
Clarita Scott Holden, 1932—Women's Committee.

Holders of Certificates of Honor because of Committee Awards are as follows (the chairmen are marked with an asterisk):

R. W. Bailey (1929), Southern California Gas Co.
J. M. Bourus (1929), San Diego Consolidated Gas and Electric Co.
N. H. Bradshaw (1929), Los Angeles Gas and Electric Corp.
H. E. Butler (1928), Southern California Gas Co.
Geo. A. Campbell (1929), Sierra Pacific Power Co.
Edw. H. Coe (1929), Central Arizona Power Co.
C. D. Cushman (2) (1928, 1929), Los Angeles Gas and Electric Corp.
C. P. Cutten (1929), Pacific Gas and Electric Co.
**Clarita Scott Holden (2) (1931, 1932), Los Angeles Gas and Electric Corp.
O. A. Honey (1928), Southern Counties Gas Co.
**R. A. Hornby (2) (1928, 1929), Pacific Lighting Corp.
S. A. Horner (1929), British Columbia Electric Power and Gas Co.
C. A. Isbell (1929), Southern Counties Gas Co.
*A. T. Kelly (1929), Pacific Gas and Electric Co.
W. D. Knight (1929), Tucson Gas, Electric Light and Power Co.
Jas. Lightbody (1929), British Columbia Electric Power and Gas Co.
G. F. Mackenzie (1929), Portland Gas and Coke Co.
C. C. May (2) (1928, 1929), San Diego Consolidated Gas and Electric Co.
*Geo. L. Myers (1929), Portland Gas and Coke Co.
Marshall Shaw (1929), Portland Gas and Coke Co.
M. J. Wilkinson (1928), Portland Gas and Coke Co.

New Committee Heads in Accounting Section

R. N. Dreiman, General Chairman of the Accounting Section, announces that N. H. Bradshaw, Los Angeles Gas and Electric Corp., has accepted the chairmanship of the Fixed Capital Records Committee, and George Riblet, San Diego Consolidated Gas and Electric Co., has accepted the chairmanship

of the Stores Accounting Procedure Committee.

A meeting of a special committee on Merchandising Expense Accounting was held in Los Angeles on March 7.

Northwest Conference at Seattle, June 22-23

President H. L. Masser, after conferring with Jas. F. Pollard, vice-president and general manager of the Seattle Gas Co., has set June 22 and 23 as dates for the Association's Northwest Regional Conference. Sessions of the two-day meeting will be at the Olympic Hotel, and all arrangements are in charge of Mr. Pollard.

Bureau of Standards Calls Two Corrosion Conferences

UNDER the auspices of the U. S. Bureau of Standards two soil corrosion meetings are being held in March and April. The first meeting is tentatively called for March 30, 31, and April 1, at the Bureau of Standards, Washington, D. C.

K. H. Logan, chief of the Underground Corrosion Section of the Bureau, is organizing the meetings. At the request of Mr. Logan, W. M. Henderson, superintendent of distribution for the Los Angeles Gas and Electric Corp. is issuing a call for a Pacific Coast meeting to be held at Los Angeles on April 13-14 in the L. A. Gas and Electric Corp. auditorium.

It is contemplated to have both the above meetings cover the same ground of discussion. Tentative topics outlined by Mr. Logan for the conferences include the following: Factors affecting underground corrosion; corrosion experiences; soil corrosion surveys; electrolysis; inorganic pipe coatings (cement coatings, vitreous enamel); tests of protective coatings; cathodic protection; round table discussions. The Washington conference will also devote a day to the examination of underground pipe specimens.

A. G. A. Laboratory Officials Exchange Duties

A temporary exchange in duties between Dr. F. E. Vandaveer, supervisor for the A.G.A. Testing Laboratory at Cleveland, and W. M. Couzens, supervisor, Pacific Coast Branch Laboratory, was made in February. Dr. Vandaveer arrived in Los Angeles on February 18 to assume charge of the branch laboratory, while Mr. Couzens has gone to Cleveland to take over the research work formerly handled by Dr. Vandaveer. No change in titles is involved, the purpose of the interchange of duties being to bring about a close conformance of practices at the two laboratories. It is tentatively planned to keep the present set-up in effect for about a year, at which time the two laboratory staff executives will return to their former locations.

Commercial Section Conference, Mar. 16-17

THE program for the Spring Conference of the Commercial Section to be held in Los Angeles on March 16 and 17 has been mailed to all members of the section by General Chairman F. U. Naylor. All meetings will be held in the Auditorium of the Los Angeles Gas and Electric Corp. on the 12th floor of its building at 810 South Flower Street. The meetings are open and all members of the Association are invited to attend.

The entire day of March 16 will be devoted to a discussion of industrial sales problems under the leadership of K. B. Anderson, Chairman of the Industrial Sales Committee. Features of this program will include a paper on "New Developments in Industrial Gas Applications," by E. M. De Remer, Southern California Gas Co., and a paper on "Large Furnace Conversions," by K. B. Anderson, Coast Industrial Gas Co. On the morning program also will be a presentation of data on valves and regulators for appliances, covering work done by representatives of the Technical and Commercial Sections. In the afternoon session C. M. Grow, Southern California Gas Co., will lead a discussion on the use of gas in agriculture; Chas. Ferry, Southern Counties Gas Co., will discuss Competition in the Industrial Field; and George Heckler, Southern California Gas Co., will describe progress being made in securing and serving commercial cooking customers. A noon luncheon will be served in the building with a program arranged by E. P. Ramsay, Acting Chairman of the Publicity and Advertising Section. Elliott Hensel of the Illustrated Daily News will be the principal luncheon speaker.

Morning and afternoon sessions on Friday, March 17, will be devoted to domestic sales problems under the leadership of H. E. Davidson, Chairman of the Domestic Sales Committee. The morning program will feature a discussion of the appliance marketing problems of utilities, manufacturers and dealers in which several leading appliance manufacturers will participate. The afternoon will be devoted to a study of domestic markets and competition. The Friday luncheon speaker will be Kate Brew Vaughn of the Los Angeles Herald-Express.

Spring Conference of Technical Section

THE Technical Section's annual spring conference, held March 2 and 3 in Los Angeles under the direction of Guy Corfield, general chairman, filled its four individual sessions full of worthwhile discussion on current problems and progress reports of section committees. Approximately 80 were present at each of the four programs.

One action announced at the conference was the organization of a publication's committee in the Technical Section, which will pass on all committee reports and determine whether they merit publication in the Proceedings. Mr. Corfield, as general chairman of the Section, will serve as ex-officio chairman and has appointed W. M. Henderson, L. A. Gas and Electric Corp., Frank Wills, Pacific Gas and Electric Co., Wm. Moeller, Jr., Southern California Gas Co., and Douglas Van Dyke, L. A. Gas and Electric Corp., to comprise the committee.

In addition to progress reports from the Section's working committees the following papers were offered, several of which will appear in future issues of *Western Gas*:

Bottled Natural Gas for Testing Main Extensions and Services, F. H. Winslow.

The Need for Engineering Data to Combat Unsound Legislation Concerning the Safety of Gas Appliances, by H. M. Sutherland.

Pressure Relief Valves for Low-Pressure Distribution Systems, by W. L. McKee.

Keeping the Public Out of the Ditches, by H. S. Harris.

The Effect of Distribution Pressures on Leakage and Their Resulting Effect on Distribution Costs, by H. S. Harris.

Cathodic Protection, by W. R. Schneider.

The Design of Ground Electrodes for Cathodic Protection Stations, by H. J. Keeling.

The San Diego Change-Over from Oil to Natural Gas, by D. H. Perkins.

The Economics of Pipe Wall Thickness, by N. L. Hoff.

Welding of Copper Alloys, by R. L. Cook.

Internal Corrosion of Transmission Lines, M. T. Burton.

Effect of Connecting Rod Angularity on Double Acting Engines, by Grove Lawrence.

Effect of Gas Engine Piston Design on Heat Dissipation, by C. S. Pool.

Metal Spray at Compressor Stations, by B. E. Embry.

High B.t.u. Oil Gas Manufacture and Utilization, Symposium led by Frank Wills.

Construction, Operation and Maintenance of Waterless Gas Holders, by T. N. Kellett.

Beaver City and Oxford City Let Franchises

Natural gas franchises have been granted by city councils of Beaver City and Oxford City, Neb., to the D. B. Cogswell Co., now engaged in test drilling for gas in the vicinity of these communities. Test wells must be drilled by July 1, 1934.

Gas Engine Rate Adopted on Coast Counties Lines

A new gas rate applying to service for internal combustion engines has been instituted by Coast Counties Gas and Electric Co., Santa Cruz, Calif. The rate incorporates a minimum charge—$5 per meter per month from April to October inclusive, but not less than 25 cents per month per h.p. of connected load; from November to March inclusive the minimum charge is $1 per meter per month. During the April-to-October period commodity charges per M c.f. are: First 100,000 c.f. per month 40 cents; next 400,000 c.f. 35 cents; next 500,000 c.f. 30 cents. All over 1,000,000 c.f. 25 cents. For November to March the above rates are 10 cents higher per thousand c.f. in each of the brackets. The new gas engine rate is set up to enable the company to sell gas engine load advantageously against Diesel engine competition, when overall investment and maintenance costs are considered.

Summary of Southern Counties Advertising for 1932

W. D. Thurber, advertising manager of Southern Counties Gas Co., reporting upon the newspaper advertising done by his organization in 1932 shows that a total of 58,090 inches of display advertising were used in 21 daily and 55 weekly newspapers in Southern California. The largest single item in the budget was for range advertising, with emphasis upon clock-controlled models. In addition to newspaper advertising the company issued nine editions of direct-to-consumer mailing pieces with approximately one million total circulation.

Republic Steel Official Addresses A. S. S. T.

Earl C. Smith, chief metallurgical engineer of Republic Steel Corp., Youngstown, Ohio, addressed a meeting of the American Society for Steel Treating at Muncie, Ind., March 1, on "Alloy Steels from the Manufacturer's Viewpoint." He will also speak on the same subject at meetings of the A.S.S.T. at Buffalo, N. Y., on March 8, and at Rochester, N. Y., on March 9.

Deep Test Due for Gas Area at Pasco, Wash.

Northwest Oil & Gas Co., principal operator in the Pasco, Wash., oil field has let a contract to sink the first deep test in this section. There are now 16 gas wells in the field, all producing from 700 to 800 feet, with little pressure. The new test will go to 6000 feet.

Standard Gas and Electric Co.'s 1933 Gas Construction Budget $1,869,464

Standard Gas and Electric Co.'s preliminary construction budget for 1933 will total $1,869,464 for gas utility companies in the system, according to John J. O'Brien, president of the company.

Central Heating

(Continued from Page 18)

Heating contractors were given practically all installation work.

The company's regular house heating salesmen were given a salary of from $85 to $100 monthly, a commission of 5 per cent of the equipment selling price, and a load-building bonus amounting to 5 per cent of the estimated annual gross revenue from gas sales. Salesmen shared in sales made through heating contractors, and extended excellent sales assistance to them. The general sales supervisor and dealer supervisor were on flat salary, receiving in addition 1 per cent of estimated gross gas revenue on all jobs sold.

A sales engineer was employed to assist in properly equipping salesmen in advance of the campaign. At the end of the first six weeks of the drive this engineer returned for a follow-up series of talks and discussion of specific problems. Semi-weekly sales meetings were held during the campaign, often participated in by manufacturers' representatives.

Whereas a 10 per cent drop in the company's gross income had been anticipated with the change to mixed gas, a check for the two months immediately following the conversion showed an increase over the same months of the year previous.

Industrial Gas Sales Trends

SEEKING to analyze the factors which have increased sales resistance in the industrial branch, E. R. Rothert of the Union Gas & Electric Co. listed these in the following order of importance for the Eastern Conference:

1. General business conditions.
2. Equipment and fuel competition.
3. Rate agitation.
4. Comparative fuel costs.
5. Inefficient and inadequate equipment.
6. Ineffective sales effort.

A significant indication of the competitive trend is seen in the fact that a few manufacturers are providing combustion engineers to make periodic calls on purchasers of their equipment to instruct operators and secure maximum performance. This is usually done gratis, under the terms of the sales contract. A more familiar angle is the taking of time payments out of savings in cost of fuel previously used.

Mr. Rothert suggested that industrial gas sales engineers should be consulted more closely by rate-making departments. Being familiar with comparative values and applications of various fuels they are often in a position to advise on the most advantageous type of rate.

E. R. Rothert

Present conditions do not admit of capitalizing the intangible advantages of gas fuel to the same extent as hitherto. Also, both oil and coal have vastly improved the quality of their utilization equipment, and prices for coal are back to the levels of 15 or 20 years past. With these conditions to meet the gas industry very apparently must command a higher type of sales organization than it has ever put in the field before.

On the optimistic side, economists see a not far distant time when raw materials and manufactured products of all kinds will be at a premium, which will to a great degree restore the competitive fuel balance. The gas industry must be ready to cash in at the first sign of revival, while using the utmost present effort to hold and extend its industrial load through progressive sales methods —advertising, survey work, elimination of dead timber in sales departments. It was suggested that the closest possible cooperation should be maintained between equipment manufacturers and gas sales departments. Utilities should refrain from making their own burners and furnaces, for the same reason that they would not want manufacturers to make their own gas or generate their own power.

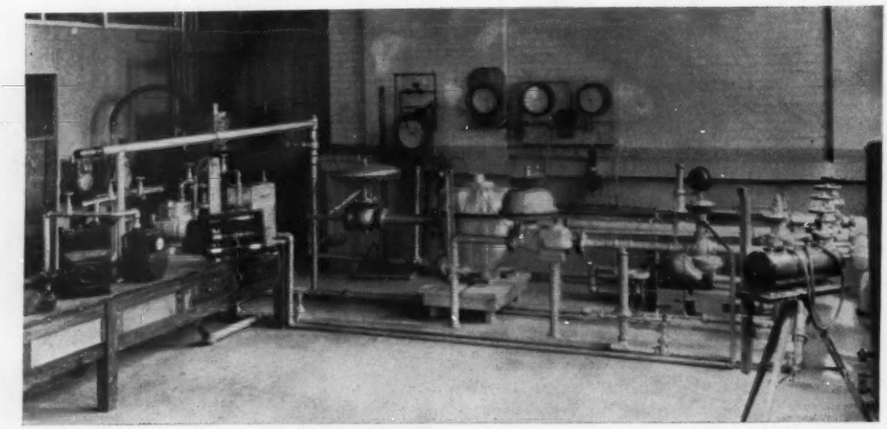
Natural Gas Dept. Meets September 25, at Chicago

Decision has been reached to hold the annual convention of the American Gas Association Natural Gas Department in Chicago on Monday, September 25, according to A. E. Higgins, secretary of the Department. Program details are already being arranged.

The Natural Gas Department meeting will be held in conjunction with the International Gas Conference and the Fifteenth Annual Convention of the American Gas Association, dated for the week of September 25 at Chicago.

Rebuilding Greenville Offices

Local and district offices of the Mississippi Power and Light Co. in Greenville, Miss., recently destroyed by fire, are being rebuilt in larger and more modern form.



Portion of natural gas engineering laboratory at University of Oklahoma

Natural Gas Engineering at University of Oklahoma

EFFECTIVE with the beginning of the present semester of the college year, February 1, the University of Oklahoma at Norman is offering a course in natural gas engineering leading to the degree of natural gas engineer. It is believed that this is the first course leading to this degree offered by any university in the United States. The course will be under the direction of Professor W. H. Carson, known to many in the industry through the active part he has taken in the Southwestern Gas Measurement Short Course, held annually at Norman since 1924.

It is expected that the course will prove a popular one as the tremendous expansion of the natural gas industry during the past five years has demonstrated to natural gas company executives the crying need for adequately trained natural gas engineers.

Oklahoma University, surrounded as it is by several major natural gas producing areas and in immediate proximity to natural gas operation of every character on a large scale, and equipped mechanically as well as geographically to afford the best of advantages to men wishing to avail themselves of what the new course offers, is ideally situated for this important forward step in technical education.

The new course in natural gas engineering at the Oklahoma University consists of the regular engineering curriculum for the first year, the mechanical engineering curriculum for the second year, and for the third and fourth years are included such courses as general thermodynamics; steam laboratories (calibration of various equipment used in testing steam and internal combustion engines, boilers, etc., running thermal efficiency tests on steam engines, compressors, turbines, pumps, etc.); graphics; elementary surveying; electrical currents and machines; gas lift; power plant engineering; strength of materials; laboratory testing of materials; drilling and development of oil and gas wells; physical testing of oils; theoretical study of refrigeration (mechanical and gas); theoretical study of internal combustion engines; gas transmission and measurement; machine design; engineering contracts; power plant design; heating and ventilation; an advanced course in thermodynamics and problems dealing with the natural gas industry; hydraulics; natural gasoline and refining; storage and transmission of oils.

Underground Pipe Protection Institute Dissolved

JOHN B. McEWAN, secretary-treasurer of the Underground Pipe Protection Institute on January 31 announced that by the unanimous vote of its members, the Institute has been dissolved. This decision was reached at the annual meeting held in New York on December 14.

Formed in 1929 by the leading manufacturers of pipe protection materials, the Institute was organized as a non-profit group to co-operate with the American Petroleum Institute and the Bureau of Standards in the three-cornered tests of pipe protection materials and methods. Subsequently, the U. P. P. I. functioned with the American Gas Association in their studies of pipe protection.

The members of the Institute felt that since the co-operative tests were now on a sound basis and insured valuable information for manufacturer and consumer alike, continued joint action was no longer necessary. Hearty appreciation was expressed for the co-operation given by those organizations and individuals who co-operated in the accomplishments of the Institute.

Noteworthy in the accomplishments of the U. P. P. I. was the preparation of the "Tentative Code for Visual Inspection of Protective Coatings on Buried Pipe". This code was first released at the November, 1931, meeting of the American Petroleum Institute at Houston. Copies of the Code are available, in limited quantity, at the office of the Institute. Requests for these copies should be addressed to John B. McEwan, secretary, 30 N. LaSalle St., Chicago, Ill.

Guy W. Talbot Resigns as President Portland Utilities

RESIGNATION of Guy W. Talbot, president of Portland Gas and Coke Co. and Pacific Power and Light Co. since 1910, and of the Northwestern Electric Co. since 1925, was announced on February 25. Mr. Talbot resigned upon advice of physicians to preserve his health.

He is succeeded by Paul B. McKee, president of the Brazilian Electric Co., headquartered at Rio de Janeiro. Mr. McKee was assistant to the president, and later vice-president and general manager of the California Oregon Power Co., at Medford, Ore., from 1916 to 1927, when he became president of the Brazilian company. He was born in San Francisco and was graduated in electrical engineering from Stanford University.

Mr. Talbot becomes chairman of the Portland Gas and Coke Co. board of directors, succeeding C. F. Adams, chairman of the board for the past 23 years, and will also remain a director of Pacific Power and Light and Northwestern Electric. Mr. Talbot came to Portland in 1906 as vice-president and general manager of Astoria & Columbia River Railroad and the Corvallis & Eastern Railroad. A year later he became vice-president and general manager of the Oregon Electric Co. In 1910 he entered the gas and electric utility field as president of the Portland Gas and Coke Co., which acquired assets of the old Portland Gas Co. Pacific Power and Light Co. was organized the same year with Mr. Talbot as president. In 1925 the American Power and Light Co. purchased control of Northwestern Electric from the Fleischhacker interests, Mr. Talbot becoming president of Northwestern Electric. He was also president of Inland Power and Light Co.

After a return to Rio de Janeiro to terminate his interests there, Mr. McKee will shortly assume executive direction of the northwest companies. He became executive head of the Brazilian properties in 1927, the company serving 3,000,000 people with gas, electric, water, telephone, and street railway service, with 10,000 men on its payroll.

Mankato, Minn., Has New Gas Company Building

Northern States Power Co. employees at Mankato, Minn., are now installed in a new two-story building. A merchandise display room, customer's offices, billing department, etc., are installed on the first floor. On the second floor are executive offices, a conference room, and a large demonstration room which can be also used as a general meeting room.

Oil Equipment Exposition at Dallas, April 17-23

The Oil Equipment and Engineering Exposition will be held in Dallas, Tex., from April 17 to 23, displays featuring equipment for drilling production, refining, pipe line, natural gas and marketing divisions of the industry. Exhibits will be in the machinery building of the Texas State Fair Grounds.

COMMITTEE:
DOUGLAS BUCKLER, SO. CALIF. GAS CO.
J. EARL JONES . . . SEATTLE GAS CO.
J. CHARLES JORDAN (CHAIRMAN) P. G. & E.
F. U. NAYLOR . . . . . P. G. & E.
E. P. RAMSAY . . . . L. A. G. & E. CO.

HEADQUARTERS:
PACIFIC COAST GAS ASSOCIATION
447 SUTTER STREET SAN FRANCISCO
H. L. MASSER (L. A. G. & E. CO.) PRESIDENT
CLIFFORD JOHNSTONE, MNG. DIRECTOR

CO-OPERATIVE ADVERTISING NEWS

Creating Good Will

More than 25 new advertisements have already been produced in the 1933 trade journal series. These powerful sales messages are appearing regularly in 18 leading Pacific Coast industrial and business publications.

By this cooperative plan, the gas industry's messages are being delivered to over 300,000 readers each month—in 11 different industrial classifications—at extremely low cost.

MARCH SCHEDULE

Architects and Builders' Publications

Architect & Engineer.....1 pg.
California Arts & Architecture.....⅛ pg.
Pacific Builder & Engineer .....⅔ pg.

EDITORIAL CO-OPERATION

Editors of these magazines regularly publish feature articles and news items on gas utilization. . . . Impressive results are obtained by supplying them with accurate technical articles and "live news" of real interest and value to their readers.

Paving Way for Sales

Southwest Builder & Contractor..⅔ pg.

Appliance Dealers

Western Appliance Retailing.....½ pg.
Western Plumbing & Heating Journal .....⅔ pg.

Hotels, Restaurants, Caterers

Keeler's Pac. Hotel Review.....⅔ pg.

Miscellaneous

Western Baker .....1 pg.
Western Confectioner & Ice Cream News .....1 pg.
Pacific Dairy Review .....1 pg.
Pacific Factory .....1 pg.
Pacific Laundry Journal & Dry Cleaner .....1 pg.
Western Machinery & Steel .....1 pg.

(1) *Chapman Park Hotel* (Los Angeles) pays a tribute to gas cookery for success in maintaining training-table standards. This hotel housed and fed all women contestants in the Olympic games.

(2) *Pacific Confectioner & Ice Cream News* carries this impressive message, featuring the manufacturers of famous HAAS CANDY. "I.E."—the gas company's INDUSTRIAL ENGINEER—symbolizes free technical service.

(3) *Western Plumbing & Heating Journal.* A convincing statement by BORTNER & KENNEDY, successful Seattle plumbers, on how to restore lost volume by selling gas appliances. "Co-operation with the gas company pays."

(4) In this striking ad, architects and builders are informed on gas heating equipment in the beautiful new University of California hospital in San Francisco—"gas-heated, of course."

Watch This Page Each Month For More News and Views of the P.C.G.A. Cooperative Program

Here's HOUSE-WARMING at the LOWEST COST
DEALERS
HALE BROS.
STERLING FURNITURE CO.
J. H. WILEY
Gas Circulating Heaters are the last word in healthful home heating at very low cost.
See these dealers about various models, prices, terms.
These new type heaters are attractive to see—inexpensive to buy—economical to use.
See these dealers about various models, prices, terms.
DEALERS
GERNHARDT & STROHMAIER
LACHMAN BROS.
NATHAN DOHRMANN CO.
Here's HOUSE-WARMING at the LOWEST COST
DEALERS
EASTERN OUTFITTING CO.
REDLICK-NEWMAN COMPANY
J. H. WILEY
Gas Circulating Heaters are the last word in healthful home heating at very low cost.
See these dealers about various models, prices, terms.
These new type heaters are attractive to see—inexpensive to buy—economical to use.
See these dealers about various models, prices, terms.
DEALERS
SPARK STOVE SHOP
SPARK STOVE SHOP
THE WHITE HOUSE
Here's HOUSE-WARMING at the LOWEST COST
DEALERS
THE EMPORIUM
LACHMAN BROS.
M. J. PURCELL
Gas Circulating Heaters are the last word in healthful home heating at very low cost.
See these dealers about various models, prices, terms.
Golden-Glow
These new type heaters are attractive to see—inexpensive to buy—economical to use.
See these dealers about various models, prices, terms.
DEALERS
CHAS. BROWN & SONS
GERNHARDT & STROHMAIER
STERLING FURNITURE CO.

Double car cards used during circulating heater campaign

San Francisco Circulating Heater Drive Sells 1500 Units for G. A. S. Members

By JEAN SCOTT FRICKELTON
Gas Appliance Society of California

EVEN the weather man gave a helping hand to San Francisco dealer members of the Gas Appliance Society who staged their second annual circulating heater campaign last November and December. An aggressive advertising campaign, plus the coldest weather since 1869, combined to put the Society quota well over the top, piling up an aggregate sale of nearly 1500 heaters over the campaign period. Dealer records show that this two-month drive resulted in more sales than the total number for the other 10 months of the year.

Graydon A. Milton Sec'y, San Francisco Unit, G. A. S. of Calif.

According to Graydon A. Milton, secretary of the San Francisco Unit of the Gas Appliance Society of California, which sponsored the campaign, the chief promotional feature of the drive was a double street car card, placed in 914 street cars in San Francisco during the six weeks. This double card contained pictures of two separate makes of heaters with a list of principal dealers selling each. Several sets of these cards thus made it possible to show the actual appliances being made by the leading factories, as well as a representative list of dealers throughout the city. Only the names of manufacturers and dealers who financed the campaign were used in these street car ads. Since it is estimated that the 914 street cars carry 29,000,000 passengers per month, it is evident that the message "Here's house-warming at the lowest cost" was presented to a large audience through the use of these colorful cards.

To support the street car advertising a series of radio announcements carrying the same names of manufacturers, their products and dealers selling them, were broadcast over station KJBS for a period of two months. Displays of circulating heaters at the office of the Pacific Gas and Electric Co. at 445 Sutter Street, as well as in the dealers stores, and a children's essay contest sponsored by The San Francisco News, aided the program.

In addition to building a sales record for the dealers, the campaign brought a few favorable although unique returns in opening up new dealer outlets for some of the manufacturers.

According to S. W. Newman, president of the San Francisco Unit, the campaign was so popular among those who participated that it is planned to make it an annual affair. Both Mr. Newman and Mr. Milton are receiving congratulations on the success of the campaign, as well as inquiries from other communities on "how it was done".

Rocky Mountain Gas Co. Serving Natural Gas at Laramie

NATURAL gas was turned into the distributing system at Laramie, Wyo., on February 14 by the Rocky Mountain Gas Co., according to information supplied *Western Gas* by John MacFayden, president and general manager. Rocky Mountain Gas Co. is a subsidiary of Ohio Oil Co. and recently purchased the Laramie Gas Co. from Associated Public Service Co. of Chicago.

Ohio Oil Co. wholesales gas to the Rocky Mountain Gas Co. at the Laramie city gate, gas being brought from the Dutton Creek field through an oil line formerly owned by the Illinois Pipe Line Co., also a subsidiary of Ohio Oil. The line formerly brought oil from the Rock River field to the Standard Oil Co. refinery at Laramie which was abandoned last summer. In its completed form the line will be 35 miles of 6-inch pipe, 4½ miles of newly laid 8-inch connecting the wells to the trunk line, and two miles of new 8-inch connecting the city end of the trunk line with the gas distribution system.

Other construction involved calls for several meter and regulator houses and the extension of the city distribution system, this work to get under way as soon as the frost has left the ground. This summer the oil line will be raised, scraped and wrapped.

Manufactured gas has been served in Laramie for a number of years prior to the recent introduction of natural.

Ohio Oil Co. is completing a gas well on the Allen Lake structure near Medicine Bow as reserve for the Laramie system, and will connect the field to the Dutton Creek line if gas in commercial quantities is found.

High B.t.u. Gas Available at Fort Dodge, Iowa

Fort Dodge Gas and Electric Co., Fort Dodge, Ia., is now prepared to manufacture 1000 B.t.u. gas for use as stand-by in the event of natural gas line failure, according to T. C. Roderick, general manager. Experiments were conducted by United Light and Power Co., of which the Fort Dodge utility is a subsidiary, using the United laboratories and plant at Mason City. The town of Clear Lake which gets its gas from Mason City was cut off from natural gas and supplied the new high B.t.u. product, the appliances functioning perfectly without adjustment. The Fort Dodge plant was then put in shape to manufacture the new product and experimental runs made. Mixtures of this gas and natural gas were used satisfactorily in the city. E. L. Fischer, gas engineer, O. K. Smith, chemical engineer, and Richard E. Henneman, assistant gas engineer, all from Davenport headquarters of United Light and Power, were in charge of the work at Fort Dodge.

May Bond for Gas System

An election will be held in St. Francisville, La., on March 21, to determine whether or not the town will issue bonds in the amount of $50,000 for building a gas distribution system and bringing natural gas to St. Francisville.

BUTANE - PROPANE NEWS

Covering Liquefied Petroleum Gas Service

Liquid Gas For Frost Protection

By HAROLD W. SMITH

Engineer
Liquid Gas Orchard Heater Corp.

THE influx of many people into the citrus districts of California and present economic conditions have combined to demand a change in the heating methods employed for frost protection. Previously dense clouds of soot from smudge pots caused slight actual damage and discomfort and affected only a few people, but with the constant growth of population in the citrus area, the soot nuisance has become a serious problem. Damage by soot to the communities has amounted to thousands of dollars and has caused property values in the smoke-infested areas to constantly decrease in value. Present conditions demand a greater economy and efficiency in operation as well as better protection against frost.

Harold W. Smith

Intensive investigation and research by Floyd D. Young, meteorologist, U. S. Weather Bureau, and Professor Schoonover of the University of California have brought to light much valuable and useful information regarding frost protection and grove heating. The old theory, that the soot cloud protected the citrus grove from frost by forming an insulating blanket, was proven false. In fact, it was found that this soot cloud only prevented the earth from being heated by the sun during the day; consequently, during a cold spell of several days, each night became colder due to loss of heat from the sun. In addition to this drawback, soot represents a tremendous waste of fuel as it is unburned carbon that should have been utilized in heating the orchard.

A great deal has been done in an effort to prevent the oil heaters from emitting soot. New types of long and short stacks, improved drafts and many novel devices have been developed. The results of these, however, have been only partially successful, as the average oil heater is of the distilling type and requires considerable adjustment to burn the fuel properly. The fact that 2,184 tank cars of oil are required for one filling of the heaters now in use in the California citrus area, and that this quantity of oil may be burned in one night gives one some idea of the many tons of soot that are ejected by oil heaters.

Several years ago Paul Melchert conceived the idea of using liquefied petroleum gas as a fuel to eliminate the soot nuisance. Many months were spent in experimenting, during which time the writer served as engineer in developing a satisfactory heater and heating system. Patents were applied for, completely covering this new method of heating. The Liquid Gas Orchard Heater Corp. was formed with offices located in Los Angeles, Calif., with the following officers: James M. Conlon, president; Paul Melchert, vice-president; and Emmett Spencer, secretary and treasurer.

The first installation of the liquid gas orchard heater system was made in a modern Southern California grove, on the Johnson Bros. Ranch, located at Claremont. The installation was completed at 9 o'clock on the night of December 15 and was placed in operation at 11:30 the same night when the temperature began to fall and reached a low point of 27° F. Shortly after lighting the heaters a temperature of 38° was obtained in the coldest section of the grove. Each heater worked perfectly and the system was shown to be highly efficient and economical.

The liquid petroleum gas used for fuel is stored in a pressure tank, having sufficient capacity to supply fuel for the average number of burning hours required during the heating season. A tank of 3,000-gallon capacity is recommended for a 5-acre grove, and a 5,000-gallon tank for a 10-acre grove. The tanks are designed to code specifications for pressure vessels, and are equipped with a safety valve and liquid gauge. Vapor and liquid lines lead from the tank to a fill box placed in a convenient location for filling from a tank truck, trailer, or tank car. Fuel may be transferred from the delivery equipment to storage by means of gravity or by pumping, depending on the elevation of the storage container.

The fuel supplied for the original installation is a propane and butane mixture—70 per cent butane and 30 per cent propane. Considerable credit is due the gas department of the General Petroleum Corp. of California for the cooperation, service and research it

ILLUSTRATIONS:

ABOVE: Laying liquid gas distribution system in citrus orchard. Storage tank for butane-propane mixture is seen at right, with F. S. Burt of General Petroleum Corp., and Harold W. Smith, Liquid Gas Orchard Heater Corp., in the view. BELOW: Close up of liquid gas heater in citrus grove (note the traditional type oil smudge pot in background).

CYLINDERS FOR BOTTLED GAS

Properly Designed in Accordance with I.C.C. Regulations — Rigidly Inspected — Thoroughly Tested.

The majority of distributors of Liquefied Petroleum Gas now use Scaife Cylinders.

Modern Manufacturing Methods combined with an increasing demand have resulted in Scaife I.C.C. Cylinders being the most economical cylinder in use today.

Cylinders built to meet each purchaser's service requirements.

A large stock of cylinders of standard sizes insures prompt service. 130 years of experience in manufacture of steel products is behind each Scaife cylinder.

FOUNDED 1802

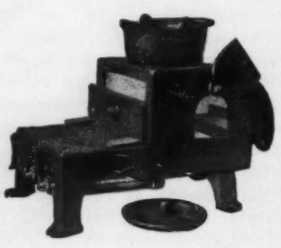
WM. B. SCAIFE & SONS CO.

Oakmont, Pa. (Pittsburgh District)

New York Pittsburgh Chicago

Johnson No. 118 Bench Furnace

No. 118 in the Johnson line represents one of the most complete bench furnaces made. It is designed for heating the largest soldering coppers, branding irons, etc.; tempering, heat-treating, etc.; and soft metal melting. No blower is needed for any of the operations. Write for details and prices on the No. 118.

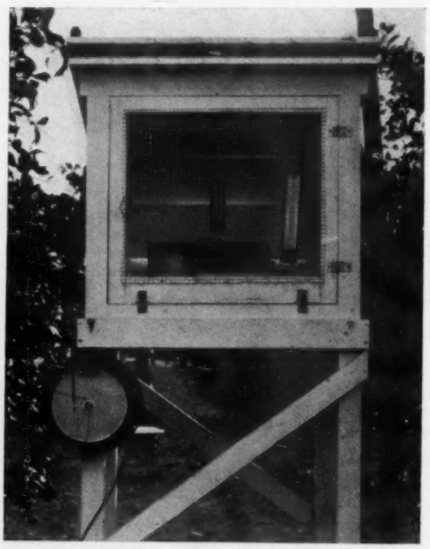


JOHNSON GAS APPLIANCE CO.
Cedar Rapids IOWA

Pacific Coast Representative—C. B. BABCOCK CO.
135 Bluxome St., San Francisco, Calif.

has rendered to make this new installation a success.

Liquid flows from the storage tank through a control system, from which point the heaters throughout the grove may be regulated in accordance with the atmospheric temperature. This central control system assures immediate protection of the grove during rapid and severe drops in temperature and a considerable saving of fuel if the temperature moves up and down during the night. All the heaters may be turned off at this control point, if desired. Recording instruments



Temperature recording and alarm system which notifies grove owner when liquid gas heating system should be turned on.

maintain a close record of atmospheric temperature, and also of liquid temperature in the distributing lines. When atmospheric temperature in the grove drops below 32 degrees an automatic alarm system informs the owner, so that the heaters may be started.

The liquid gas flows from the control valves through the orchard in a network of small pipe lines, designed so that there is only a slight pressure drop at the extreme terminus of the line with all the heaters lighted. Lateral lines also have individual control valves so that each line may be turned off. All pipe joints under the ground are welded and the lines tested to 100 pounds pressure to assure absolute freedom from leakage. Lines are laid below sub-soil, at depths of from 18 to 24 inches.

Distribution piping throughout the orchard is of ⅜-inch size, ¾-inch being used for header pipes. Flexible copper tubing, 3/16-inch, runs from the laterals to the heaters.

The heaters are designed to circulate a large volume of warm air and radiant heat throughout the grove, forming a complete blanket of heat close to the ground. Regulation of heat may be had at each burner if desired, and the air necessary for any burning rate is taken care of automatically. The flow of heat vertically upward is prevented by an air-insulated compartment located under the lid of the heater.

It is estimated that each burner's consumption, operating at full capacity, will range

from ½ to 1 gallon per hour. Pressures at the burner are from 5 pounds upwards, a considerable pressure range being handled satisfactorily through use of a special control valve.

The layout of piping and spotting of heaters will naturally vary considerably for individual groves, depending upon such conditions as temperature range, topography, etc. In the Johnson Bros. installation heaters have been spotted one to every other tree inside the grove, and one to each tree for the outside row on the windward side.

Operating data for the liquid gas system thus far this winter have demonstrated that it provides much greater protection to the grove than could be secured by oil heaters. Reserve heat is always available, wide variations in temperature are easily coped with and a constant temperature maintained in the grove. Refilling and cleaning of the heaters and all the drudgery and dirt of the old system have been eliminated. Labor cost and actual operating expense are also reduced to the minimum.

In addition to the direct saving secured by the installation of the gas system, many indirect savings are to be had. Damage to fruit and trees caused by the transporting of oil into the grove is eliminated. The spilling of oil with its detrimental effect will not occur. Fruit and foliage of the trees remain clean and a greater growth is obtained due to the carbon dioxide and water vapor emitted by the heaters. Property values throughout the district will increase as the havoc wrought by the soot is abolished. The entire citrus district will be benefitted.

A. E. Strong Again With Coast Counties as Gen'l. Sup't.

A. E. Strong, who for the past two years has been in charge of plant operations of the Natural Gas Corp. of Washington and Natural Gas Corp. of Oregon with offices in Portland, Ore., has been transferred to Santa Cruz, Calif., as general superintendent of the Coast Counties Gas and Electric Co., a position he held two years ago. Prior to Mr. Strong's transfer to Portland he was with the Coast Counties for over 24 years.

Butane Stand-by Storage for St. Louis Co. Gas

St. Louis County Gas Co., Webster Groves, Mo., has installed a 150,000-gallon butane storage tank, located at the Shrewsbury Works, for stand-by use in the event of natural gas line failure. The tank is of vertical cylindrical type with hemispherical ends. A mixture of natural and manufactured gas is now served by the company.

Philgas Range Sales Plan Gets Dealer Interest

Frank Andrews, manager of the Pontiac, Michigan, district for Philgas Co., recently inaugurated a unique device for stimulating dealer sales of Philgas ranges.

Mr. Andrews informed dealers in his area that sometime during a designated period someone would call at each of their stores

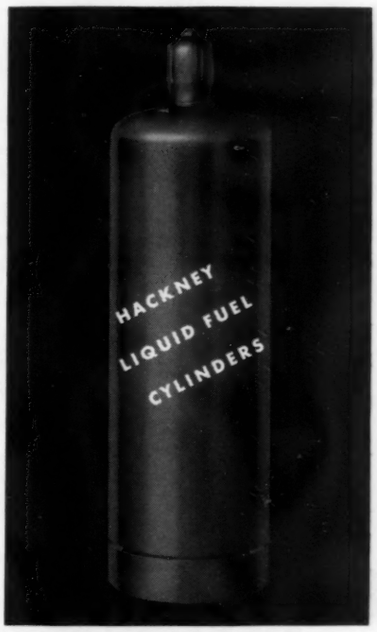
HACKNEY HAS PRODUCED CYLINDERS FOR BUTANE, PROPANE, AND PROPANE-BUTANE MIXTURES SINCE THEIR DEVELOPMENT

Hackney engineers are thoroughly acquainted with the materials, design, and manufacturing requirements of liquid fuel cylinders.

While they have produced cylinders for Butane, Propane, and Propane-Butane mixtures since their development, Hackney has been designing and forming **cylinders** for more than 25 years.

Confidence in Hackney services is indicated by the many years that large companies have been Hackney customers. These firms include: Protane Corporation, Lone Star Gas, Empire Companies, Phillipps Petroleum, Shell Chemical, etc.

Cylinder users are invited to consult freely with Hackney engineers.



PRESSED STEEL TANK COMPANY

208 S. La Salle St. Bldg., Room 1185, Chicago, Ill.
1363—Vanderbilt-Concourse Bldg., New York, N. Y.
6633—Greenfield Ave., Milwaukee, Wisc.
666—Roosevelt Bldg., Los Angeles, Calif.

Hackney
MILWAUKEE

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

GROBLE
REGULATORS & GOVERNORS

Complete Line of Regulators for

Natural, Manufactured, Butane and Propane Gas

Pacific Coast Representative,

T. G. ARROWSMITH COMPANY,

661 Howard Street San Francisco, Calif.

Phone Garfield 8419

GROBLE GAS REGULATOR COMPANY

Office and Factory: Anderson, Indiana

to purchase a replacement part for a wood, gasoline, kerosene, or electric range, or to buy either a new or used stove of some type other than a Philgas range. Dealers had no way of identifying this representative with the Philgas Co. To every dealer or dealer-salesman who mentioned the Philgas range to this caller with the thought of replacing his present equipment instead of selling the article asked for, Mr. Andrews offered $2. He reserved the right to return for cash any purchases made on this plan.

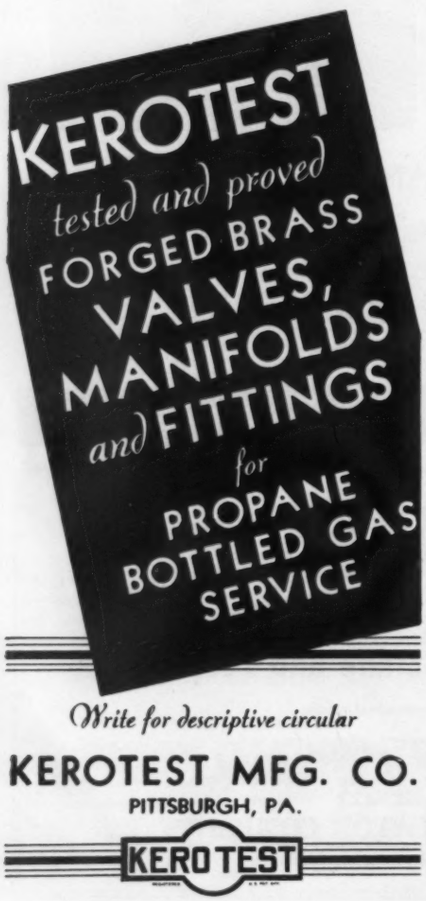
When the plan went into effect a number of dealers missed the opportunity to win the cash award by failing to "ask them to buy" but as the plan progressed, they became increasingly enthusiastic in talking Philgas ranges at every opportunity.

French Visitors Survey Gas and Liquefied Gas Fields

A survey of the gas and liquefied gas industries in America is being made by Albert Allcaume, engineer of the Societe D' Eclairage, Paris, and Comte B. deComminges, Male-les-Bains, France, recently arrived in this country from France.

No.-West Ass'n. Branch

The Northwest Oil and Gas Association has established branch offices at Aberdeen, Wash., located at 104 West Heron street.



Write for descriptive circular

KEROTEST MFG. CO.
PITTSBURGH, PA.

KEROTEST

15th Convention for Oklahoma Utilities

OKLAHOMA Utilities Association is holding its 15th Annual Convention March 6, 7, 8, in Oklahoma City's new Biltmore Hotel. The convention will open with a first-aid session at 8 p. m. on March 6, featuring a first-aid contest with teams of four companies represented. At the first general session of Tuesday, March 7, the convention will hear the president's address by R. J. Dougherty, director of public relations for The Empire Companies, Bartlesville, and the report of association manager E. F. McKay. J. F. Owens of Oklahoma City, president of the Oklahoma Gas and Electric Co., will speak on "The Utility Outlook".

Alexander Forward, managing director of American Gas Association, will address the convention March 7, his subject being "Utility Industry Trends".

At a joint session of several divisions of the Association on March 8, R. W. Hendee, president of Oklahoma Natural Gas Corp., and W. H. Carson, University of Oklahoma, will discuss the natural gas engineering course which the University is opening. Thomas G. Storey, industrial engineer of Oklahoma Natural, will speak on "Progress in Air Conditioning and Air Cooling". Two phases of municipal utility ownership and operation will be dealt with by J. A. Whitlow, vice-president and manager of Public Service Co. of Oklahoma, Tulsa, and R. D. Cockrell, Pawhuska, special representative of the Oklahoma Utilities Association.

The convention dinner will come on the evening of Tuesday, March 7, with President Dougherty in the toastmaster's chair.

W. R. McLaughlin, chairman of the general committee in charge of the Southwestern Gas Measurement Short Course, is conducting a meeting of that committee on March 8 to formulate plans for the 1934 Short Course.

Extensive Advertising by 3-Company Committee

THE Joint Natural Gas Advertising Committee of Southern California has issued a portfolio of its 1932 advertisements, attractively bound in fabricoid cover. Included are 90 individual pieces of copy inserted in newspapers, trade magazines and on billboards last year. Several special pieces are also included, among them a set of booster stamps reproducing billboard advertising. The portfolio is divided by types of appliances, with sections on automatic water heater, gas refrigerator, house heating, and miscellaneous advertisements.

Work of the Joint Natural Gas Advertising Committee is participated in by Southern California Gas Co., Southern Counties Gas Co., and Los Angeles Gas and Electric Corp., all headquartered at Los Angeles. Membership of the committee is made up of Daniel L. Scott, Los Angeles Gas and Electric Corp., chairman and treasurer; W. D. Thurber, Southern Counties Gas Co., secretary; and Douglas Buckler, Southern California Gas Co. J. S. Spaulding is actively in charge of copy preparation, under the direction of the committee.

Dealer tie-in references are given a prominent place in all the copy, which supplements the individual advertising of the three companies.

Gas Fuel Service Co. Application Heard March 15

On March 15 the California Railroad Commission will hold a hearing at Hanford, Calif. on the Gas Fuel Service Co.'s application to serve gas in Kings and Fresno counties. Fifty-year pipeline franchises are being asked of the county boards of supervisors. Claude C. Friend, Lamoore, Calif., is president of Gas Fuel Service, and J. H. Fiske, Los Angeles, is actively promoting the project, which would bring natural gas from Kettleman-Lakeview Oil and Gas Co. holdings in the Dudley Ridge area to agricultural sections for pumping and power purposes.

Customer Publication Sent to Bottled Gas Users

"Up-to-Date with Philgas Service" is a new publication being issued for customers by Philgas Co. It is attractively gotten up in 4 x 8-inch size, bringing menu information and pertinent facts on use of gas equipment to the consumer. Its prime purpose is to build good will and to keep the customer sold on bottled gas.

National Domestic Sales Promotion Program Advances

Under the leadership of the National Directing Committee of Executives recently created by the American Gas Association, the intensive program announced last month for sales and promotional efforts in the domestic field is rapidly taking on definite form. The Committee has recently employed the advertising firm of N. W. Ayer & Son to formulate details and submit a suggested plan of action for the Committee's inspection in the near future.

Conrad N. Lauer, president of the Philadelphia Gas Works Co. and chairman of the Committee, in commenting upon the contemplated work states that there is no intention of attempting to standardize policies and practices of A.G.A. member companies in developing their domestic heating and cooking markets. It is rather the purpose to stimulate and co-ordinate sales policies throughout the industry, supplementing and rounding out present advertising and sales activities of member companies with other activities of a promotional nature, and selling the story of modern gas service to the public in a unified way.

Eugene P. Lynch of Laclede Taken by Death

Eugene P. Lynch, superintendent of distribution for The Laclede Gas Light Co., died Wednesday, February 8, at St. Mary's Hospital at Rochester, Minnesota, following an operation.

Mr. Lynch, who was 47 years old, had been with the Laclede for 27 years and for the last nine years had been superintendent of distribution. It was under his direction that the change-over from manufactured to a mixture of natural and manufactured gas was made in St. Louis, which required the adjustment of approximately 2,000,000 appliances. During the change-over Mr. Lynch had under his supervision approximately 800 men and the job was completed in slightly less than three months with no inconvenience or trouble to the customers.

Corbin Utility Purchased by Peoples Gas Co. of Kentucky

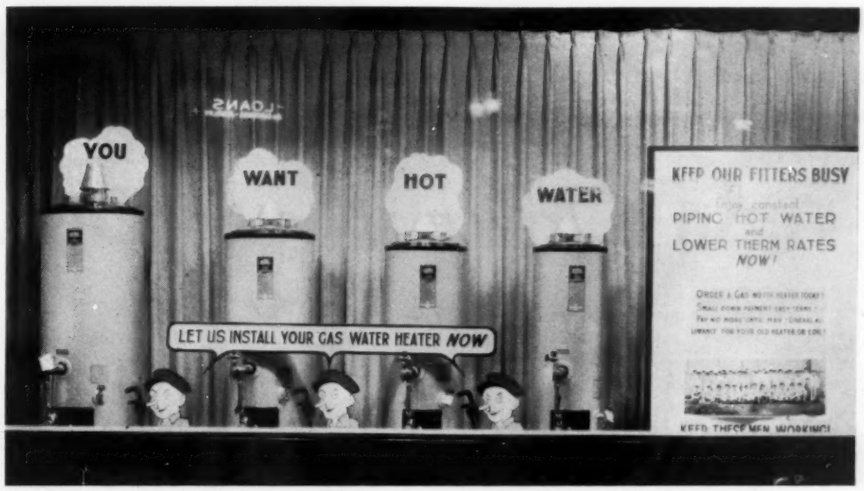
Peoples Gas Co. of Kentucky, Sistersville, W. Va., has purchased from the receiver of the Kengreen Gas Utilities Corp. all the holdings of this company in the city of Corbin, Ky., where the Kengreen Co. operated a duplicated natural gas system in competition to that owned by Peoples Gas Co. A 6-inch transmission line running about 6 miles between Corbin and the Burning Springs gas field was also purchased, together with four gas wells and about 40 domestic consumers at Burning Springs. The domestic consumers taken over with the Corbin purchase numbered about 800, according to W. P. Simmons, manager of Peoples Gas Co. of Kentucky.

Montana-Saskatchewan Project Reported Again Active

A revival of plans for laying a natural gas line from the Bowdoin field in northeastern Montana to Regina and Moosejaw, Sask., a distance of 176 miles, is reported in the February press of the district. Thomas McManus of Chicago is said to have taken over the plans abandoned by Power Corp. of Canada and to have begun negotiations for franchises in Regina and Moosejaw. The program is reported to involve expenditure of $3,500,000 in developing a supply of gas and building gathering lines, and another $450,000 or more in laying the transmission line, erecting compressor stations, and laying distribution systems in Regina and Moosejaw.

Montana-Saskatchewan Project Army of Inspectors Busy

Senate Bill 79 introduced in the Montana legislature proposes the appointment of a gas inspector and deputies by the Railroad and Public Service Commission. These appointees would inspect all vacant houses before gas is installed, and all gas-served houses which become vacant would be inspected prior to occupancy. Having completed this ambitious program the proposed inspectors would thereafter inspect all gas lines on premises where gas is used at regular intervals of 30 days.



Window display for "Keep-Our-Fitters-Busy" campaign

Spring Drive on Water Heaters in Seattle

OR the fourth consecutive year the Seattle Gas Co. is conducting a drive on water heating sales called the "Keep Our Fitters Busy" campaign. This is run each year as an early spring or late winter effort on water heating sales. J. Earle Jones, commercial manager for the company, states that the current campaign is expected to be quite successful since the employment appeal will reach the sympathies and cooperation of customers more strongly than ever this year.

Under the campaign plan customers make only a nominal down payment with no further monthly installments until the May gas bill, at which time they would normally install their water heaters. A liberal allowance is made for old tank heaters and convenient terms apply beginning with the May bill. Meanwhile by receiving the order now the gas company keeps its regular fitters busy, working longer hours than would otherwise be possible. The customer secures a better installation job than might be had during late April and May when the usual rush of orders would make it necessary to work on forced schedule.

1932 Natural Gas Totals Show California Wastage Lowered

Claude C. Brown, gas and electric engineer for the California Railroad Commission, in a report on natural gas totals for 1932 in California, shows that for this period wastage was cut to 6.3 per cent of the production, as compared to 17.8 per cent of the production in 1931. The figures are 17,510,900 M c.f. blown to the air in 1932, and 68,478,300 M c.f. in 1931. Gas utilities and others purchased 52.1 per cent of the total net productions in 1932. Year totals for 1932 are given in the report as follows:

	M c.f.	Percentage of Total
Net production	276,877,100	100.0
Repressuring	12,242,100	4.4
Gasoline plant fuel and shrinkage	53,697,100	19.4
Field fuel	40,654,500	14.7
Other fuel (Refineries)	8,666,000	3.1
Sales to gas utilities and others	144,106,500	52.1
Blown to air	17,510,900	6.3

R. C. Floyd at Kerens

Community Natural Gas Co. has appointed R. C. Floyd representative in Kerens, Tex., moving its offices into new quarters where an appliance display is now maintained.

Marysville Buttes Well May Prove Good Gasser

On February 9 the Buttes Oilfields, Inc., completed its No. 1 well on the south flank of the Marysville Buttes in Sutter County near Marysville, Calif., apparently tapping a considerable reservoir of natural gas. Walter Stadler, oil geologist of San Francisco, informs *Western Gas* that tests at the well show from 7½ to 9 million cubic feet production, with closed in pressure of 1275 pounds. The discovery well was stopped at a depth of 2727 feet because of strong gas showings. A second well has been located nearby which will be explored to greater depth. The gas is apparently wet, according to Mr. Stadler.

The discovery well has centered attention on other drilling activities in this section of Northern California, where considerable wildcatting has been under way for some time.

Reconditioning Under Way

Santa Maria Gas Co., Santa Maria, Calif., began construction work in February on excavation, reconditioning and relaying of about 40,000 feet of transmission line running south from San Luis Obispo to Reed's Station. The main was originally laid in 1914.

MEASUREMENT and CONTROL

An Orifice Meter Delivery Chart

By C. J. Brown

Superintendent of Measurements
Houston Pipe Line Company
Houston, Texas

THIS orifice meter delivery chart is designed to facilitate the solution of various problems in connection with delivery of gas through orifice meters without the aid of handbooks, tables, slide rule, etc. A straight edge, ruler or triangle, and a fine pointed pencil are the only accessories necessary in the use of the chart.

EXPLANATION OF SCALES

The scales on the chart are explained in order from right to left.

C. J. Brown

Scale A

Is a scale of multipliers to be used in connection with Scales E and F, and H and G.

Any value on Scale F may be multiplied by any value on Scale A and the result read on Scale E at the intersection of line drawn from the points representing the given values on Scales A and F.

Likewise any value on Scale E may be divided by any value on Scale A and the quotient read on Scale F.

The use of Scale A in connection with Scales H and G will be explained later.

Scale B

Scale B_1 shown on right side of Scale is for use with L-10 or square root charts. Line drawn from static reading on Scale B_1 to differential reading on Scale D_1 will intersect Scale C at the product of the two readings, or in other words, the value of the extension.

Scale B_2, the left side of Scale B, is for use with charts giving static readings in pounds per square inch gauge, and inches of mercury vacuum. Line drawn from gauge reading on Scale B_2 to differential reading on Scale D_2 will intersect Scale C at the hourly extension value, $\sqrt{Ph}$.

Scale C

The hourly extension scale has been partially explained above. For the purposes of chart calculations the graduations on Scale C need not be shown, as the point of intersection, with line drawn from static to differential values, only is used. However, any value on Scale C may be multiplied by any value on Scale G and the product read on Scale F_1.

Line drawn from hourly extension point on Scale C to coefficient point on Scale G, will intersect Scale F_1 at hourly and Scale F_2 at daily delivery.

Scale D

Scale D_1 is for use with L-10 or square root chart readings. Its use in connection with Scale B_1 has been explained above.

Scale D_2 is for use with charts giving differential readings in inches of water and is used in connection with Scale B_2 as explained above.

Scale E

Scale E_1: Values on Scale E_1 are products of values on Scale F_1 multiplied by multipliers on Scale A; i.e., intersection with Scale E_1 of line drawn from value on Scale F_1 to Scale A will indicate product of the two values.

Scale E_2 values are 24 times values on Scale E_1 at same point. Values on Scale E_2 are also products of values on Scale F_2 by values on Scale A.

Scale F

Values on Scale F_1 are products of values on Scale G by values on Scale C. These values indicate cubic feet per hour of gas of pressure base of 14.4 lbs. plus 4 oz., 60° F., .60 gravity, when used in connection with pipe and orifice size coefficient points, since the points are laid off for values of coefficients for above pressure base, temperature and gravity. However, if coefficient is known, results obtained on Scale F_1 will show volumes at same pressure base, temperature and gravity as of the coefficient which is used.

Scale F_2 values are 24 times values on Scale F_1 at same point.

Values obtained on Scale F_1 or F_2 may be corrected to any base by applying proper multiplier on Scale A and reading result on Scale E_1 and E_2.

Scale G

Except when values of coefficients are known the graduations on Scale G are not necessary in the calculation of orifice meter delivery.

Coefficient points are located on Scale G for values based on pressure base of 4 oz. plus 14.4 lbs., 60° F. and .60 gravity and for values given for Westcott Orifice Meters.

To find coefficient point for particular meter: if for 2½ and 8 diameter connections use column to left of Scale G and for flange connections use columns to right, follow broken line from pipe and orifice size to Scale G to point for use in connection with extension on Scale C.

For coefficients of other pressure base, etc., or for L-10 charts, locate ordinary coefficient as above. Then draw line from point located above to proper multiplier point on Scale A. Through the intersection of this line with Turning Scale H, draw line from point 1.0 on Scale A to intersect Scale G. This point will be coefficient to use in connection with extension point on Scale C. Line drawn from coefficient point on Scale G to hourly extension point on Scale C will intersect Scale F_1 at point indicating hourly delivery at pressure base of 4 oz. plus 14.4 lbs., 60° F. and .60 gravity.

The reading on Scale F_2 will be daily delivery on same bases.

APPLICATIONS

One

Given line pressure 250 lbs. gauge, delivery to be 500 M cubic feet per day at pressure base 2 lbs. plus 14.7, 60° F. and .60 gravity.

Wanted: Size of orifice plate to use to secure this delivery at a 50-inch differential.

1st Step: Draw line from 2 lbs. plus 14.7 multiplier on Scale A through 500 M on Scale E_2. This intersects Scale F_2 at approximately 560 M.

2nd Step: Draw line connecting 250 lbs. reading on Scale B_2 and 50-inch reading on Scale D_2. This intersects Scale C at approximately 115.

3rd Step: Draw line through point found on Scale C through point on Scale F_2 to intersect Scale G at point which indicates a ⅞-inch orifice in a 4-inch line.

Two

Given: Static reading 7.5, differential reading 3.1 on L-10 chart, on 500-lb.-100-inch meter, with 4-inch x ⅞-inch orifice plate, 2½ and 8 diameter connections.

Required: Hourly delivery in cubic feet at pressure base of 2 lbs. plus 14.7, at 60° F. and .60 gravity.

1st Step: Draw line connecting 7.5 on Scale B_1 with 3.1 on Scale D_1. This intersects Scale C at about 23.

2nd Step: Find point on Scale G for 4-inch x ⅞-inch plate coefficient. Draw line from this point to 500-lb.-100-inch-L-10 multiplier on Scale A.

Through intersection of this line with line H draw line from point 1.0 on Scale A to intersect Scale G at point for corrected coefficient.

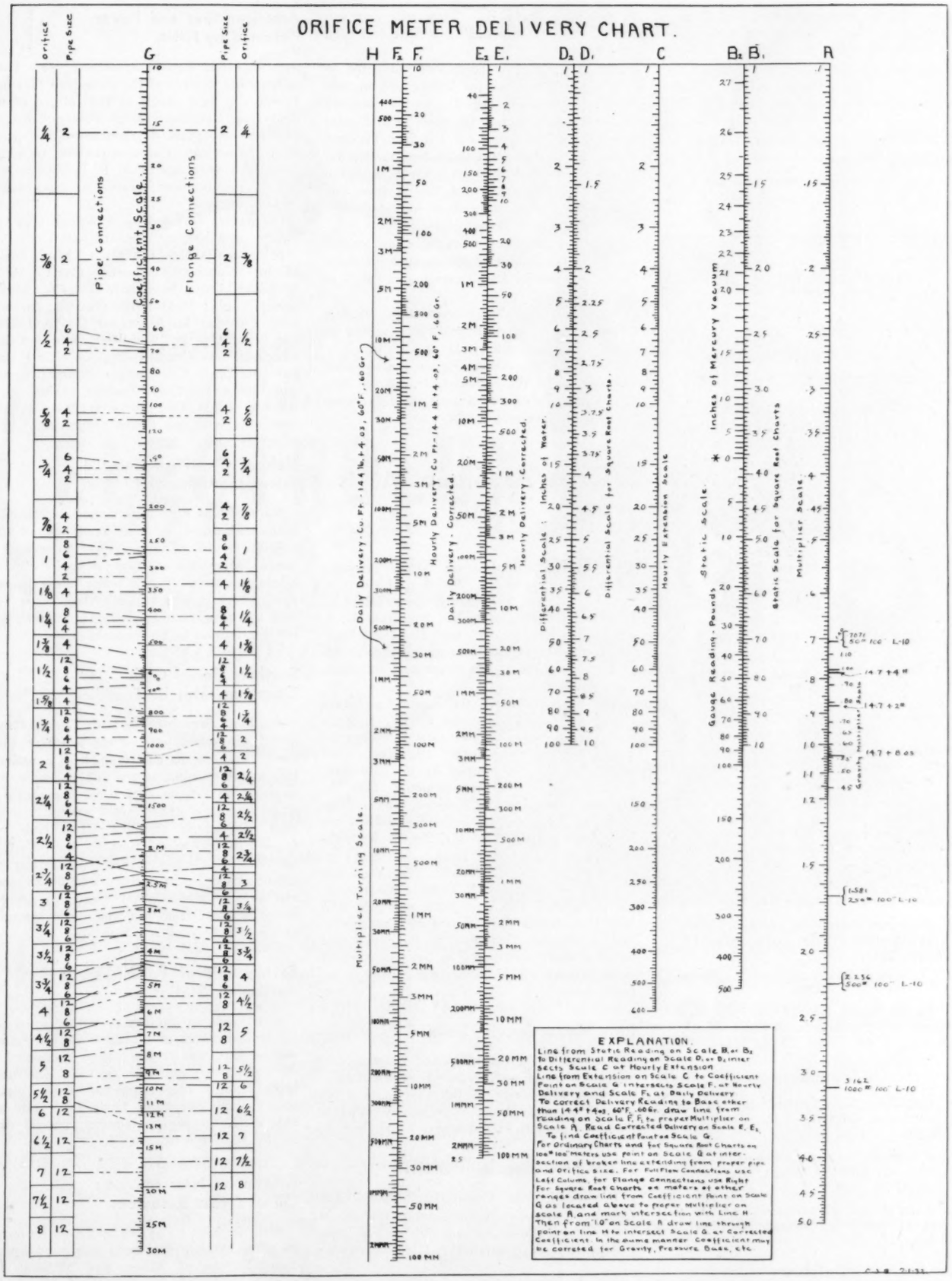
3rd Step: Draw line connecting points located on Scales C and G. This line intersects Scale F_1 at reading of 11 M.

4th Step: Draw line from point of intersection on Scale F_1 to multiplier for 2 lbs. plus 14.7 on Scale A.

This intersects Scale E_1 at 9.75 M, which is the result sought.

Three

Given a 1¼-inch orifice in a 4-inch line with L-10 chart on meter whose pressure


ORIFICE METER DELIVERY CHART.
Orifice
Pipe Size
G
Coefficient Scale.
Pipe Connections
Flange Connections
Pipe Size
Orifice
H F₂ F
Daily Delivery - Cu Ft. - 14.4 lb. + 4 oz., 60° F., 60 Gr.
Daily Delivery - Cu Ft. - 14.4 lb. + 4 oz., 60° F., 60 Gr.
Hourly Delivery - Corrected.
Multiplier Turning Scale.
E₂ E₁
Hourly Delivery - Corrected.
D₂ D₁
Differential Scale - Inches of Water
Differential Scale for Square Root Charts.
C
Hourly Extension Scale
B₂ B₁
Gauge Reading - Pounds
Static Scale.
Inches of Mercury Vacuum
Static Scale for Square Root Charts
A
Multiplier Scale.
EXPLANATION.
Line from Static Reading on Scale B, or B₂ to Differential Reading on Scale D, or D₂ inter sects Scale C at Hourly Extension
Line from Extension on Scale C to Coefficient Point on Scale G intersects Scale F, at Hourly Delivery and Scale F₂ at Daily Delivery
To correct Delivery Reading to Base other than 14.4 + 4 oz. 60° F. 60 Gr. draw line from reading on scale F, F₂ to proper Multiplier on Scale A. Read Corrected Delivery on Scale E, E₂
To find Coefficient Point on Scale G.
For Ordinary Charts and for Square Root Charts on 100" 100" meters use point on Scale G at intersection of broken line extending from proper pipe and Orifice Size. For Full Flow Connections use Left Column for Flange connections use Right
For Square Root charts on meters of other ranges draw line from Coefficient Point on Scale G as located above to proper Multiplier on scale A and mark intersection with Line M
Then from 10 on Scale A draw line through point on line M to intersect Scale G at Corrected Coefficient. In the same manner Coefficient may be corrected for Gravity, Pressure Base, etc.

ORIFICE METER DELIVERY CHART (By C. J. BROWN)

range is 500 lbs. and whose differential range is 100 inches. The static reading on the chart is 6.5. The man in charge of deliveries is asked to increase the delivery to a rate of one million cubic feet per day. Gas in this instance is being purchased on a pressure base of 4 lbs. plus 14.4, 60° F. and .60 gravity.

Required: The differential reading at which this delivery may be obtained.

1st Step: Draw line from point for 4 lbs. plus 14.4 multiplier on Scale A through 1000 M point on Scale E_2. This will intersect Scale F_2 at a point reading a little less than 1250 M.

2nd Step: Locate coefficient point for 4-inch x 1¼-inch plate for L-10 chart on 500-lb.-1000-inch meter with 2½ and 8 diameter connection as follows: On Scale G find point for ordinary coefficient for 4-inch x 1¼-inch plate. From this point draw line to 500-lb.-100-inch-L-10 multiplier on Scale A. Through intersection of this line with line H draw line from point 1.0 on Scale A to intersect Scale G at point for corrected coefficient.

3rd Step: Draw line from point just located on Scale G through point located on Scale F_2 to intersect Hourly Extension Scale C at point 52.

4th Step: Draw line from static reading 6.5 on Scale B_1 through point just located on Scale C to intersect Scale D_1 at 8.05.

This indicates that to obtain the required delivery under the above conditions the flow of gas must be increased until the differential reading on the chart is 8.05.

1933 Calendar

March

Oklahoma Utilities' Association—15th Annual Convention, Oklahoma City, March 7-8, 1933.

Pacific Coast Gas Association—Commercial Section Meeting, Los Angeles, March 16-17, 1933.

Bureau of Standards Corrosion Conference (Eastern)—Washington, D.C., March 30, 31, April 1, 1933.

April

Mid-West Gas Association—Fort Des Moines Hotel, Des Moines, Iowa, April 10, 11, 12, 1933.

Bureau of Standards Corrosion Conference (Western) — Los Angeles, Calif., April 13, 14, 1933.

Missouri Association of Public Utilities—Elms Hotel, Excelsior Springs, Mo., April 27-29, 1933.

May

Southern Gas Association—25th Annual Convention, Hotel Shoreham, Washington, D. C., May 2,3,4, 1933.

Commercial Section, American Gas Association—Southern Regional Gas Sales Conference, Hotel Shoreham, Washington, D. C., May 2,3,4, 1933

Natural Gasoline Association of America—Annual Convention, Tulsa, Okla., May 15, 16, 17, 1933.

American Petroleum Institute—Mid-Year Meeting, Tulsa, Okla., May 17, 18, 19, 1933.

June

Pacific Coast Gas Association—Northwest Conference, Olympic Hotel, Seattle, Wash., June 22-23, 1933.

September

Canadian Gas Association—Annual Convention, Ottawa, Can., Sept. 18, 19, 1933.

American Gas Association—15th Annual Convention, Chicago, Ill., week of Sept. 25, 1933.

Natural Gas Department, A.G.A.—Annual meeting, Chicago, Ill., September 25, 1933.

October

American Petroleum Institute—14th Annual Meeting, Chicago, Ill., Oct. 24-26, 1933.

S. C. M. A. Group Meets February 23

SOUTHERN California Meter Association convened in Whittier, Calif., on February 23 for its monthly dinner meeting, held at Sanders' Cafeteria. President L. P. W. DesBrisay presided, and directed discussions of the two papers, in the absence of M. J. Cereghino, program committee chairman for the Association.

The first feature on the business program was a discussion presented by W. J. Kennedy of the Los Angeles Gas and Electric Corp., on an orifice meter alignment chart which has been developed by C. J. Brown, superintendent of measurements for the Houston Pipe Line Co., Houston, Texas. The chart and a complete description of its use have been prepared by Mr. Brown for publication in the current issue.

"Meter Housings for Orifice Gauges" was the title of a paper by Gordon Greene of the Associated Oil Co. Both old type and new type boxes were shown on the screen, and a general discussion of their use and purpose was participated in by a number of those present. This paper will appear in an early issue.

Rate Reduction in Sioux City

Rates of Sioux City Gas and Electric Co., Sioux City, Ia., were reduced approximately one-fifth, retroactive to January 1, as a result of an agreement of company officials and city council in February.

Rocky Ford Regulator Station

Public Utilities Consolidated Corp. has completed a new gas regulator station in Rocky Ford, Colo., to improve service conditions in that community.

Strossel Now With Peoples Gas Co.

R. S. Strossel has accepted a position as heating engineer for the Peoples Gas Co., Somerset, Ky.

American Gas and Power Retained by Fitkin

A. E. Fitkin Co., 39 Broadway, New York, is retaining control of the American Gas and Power Co. as a result of the failure of the American Commonwealths Power Corp. to exercise an option to repurchase the property. American Commonwealths sold the property a year ago to A. E. Fitkin Co. under the proviso that it could be repurchased within the year.

Companies operated by American Gas and Power, as a holding company, are:

Minneapolis Gas Light Co., Minneapolis, Minn.; Minneapolis Suburban Gas Co., Minneapolis, Minn.; Savannah Gas Co., Savannah, Georgia; Jacksonville Gas Co., Jacksonville, Florida; St. Augustine Gas and Electric Light Co., St. Augustine, Florida; Birmingham Gas Co., Birmingham, Ala.; Bangor Gas Light Co., Bangor, Maine; Penobscot Valley Gas Corp., Bangor, Maine. Lowell Gas Light Co., Lowell, Mass., is also associated with the Fitkin properties.

Natural Gas Pipe Line Co. Extension Authorized

Natural Gas Pipe Line Co. of America has been authorized by the Rock Island, Ill. County Board of Supervisors to extend a lateral from the company's main line in Edgington township to a point below Davenport, where it is contemplated to serve natural gas to a number of cement plants, and for distribution in Davenport.

Southern Servel Club Commemorates Its Founding

Southern Servel Club, with C. M. Grow, new business manager of the Southern California Gas Co. as chairman, held a banquet and social evening at the Elks Temple, Los Angeles, on February 25 to commemorate its sixth year of organization. Some 250 members and guests attended. The club was formed in 1927 at the time Southern California Gas Co. began actively pioneering gas refrigeration on its system, and its members are some of the original Electrolux owners, many of them from the company's executive and employee ranks.

Betterments at P. G. and E Kettleman Station

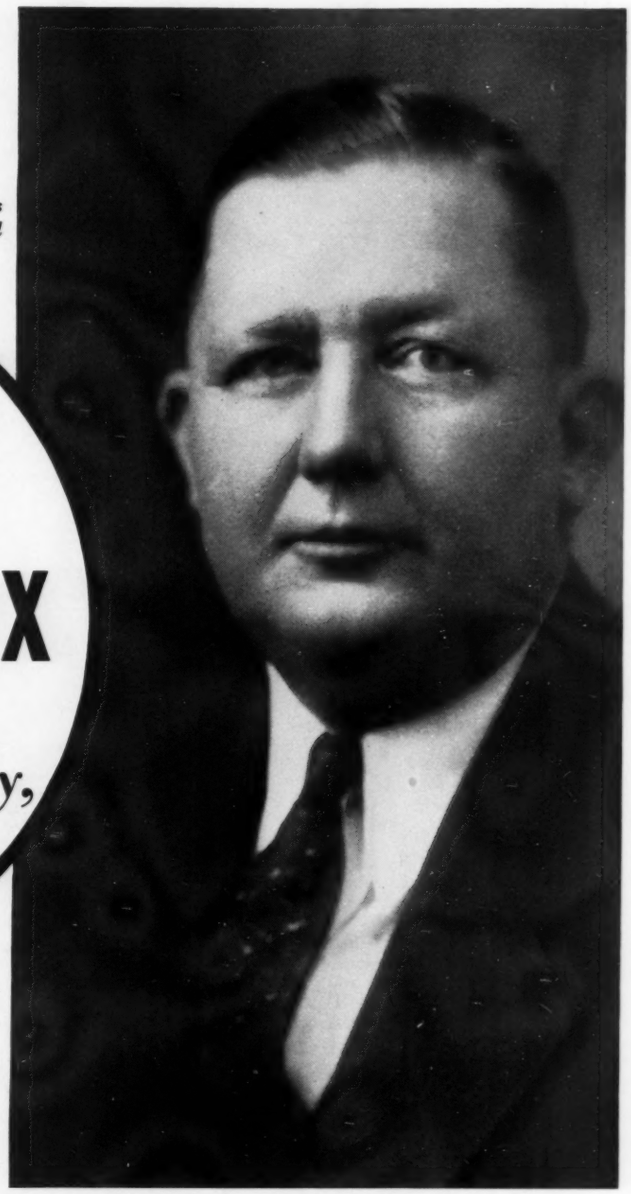
Installation of additional cooling coils, and intake and discharge piping in the compressor station yard has recently been completed at the Pacific Gas and Electric Co.'s Kettleman Hills plant. The additional intake piping adds to the operating flexibility while the new discharge piping reduces pressure drop at the station considerably.

Bulletin on New Mexico's Oil and Gas Resources

Bulletin 9 on "The Oil and Gas Resources of New Mexico" has been published by the State Bureau of Mines and Mineral Resources. New Mexico School of Mines, Socorro, N. Mex. The bulletin is prepared by Dean E. Winchester, consulting geologist of Denver, and consists of 223 pages with 62 maps and illustrations.

A tiny flame makes constant, steady cold

"The increased load from ELECTROLUX *is a profitable 24-hour-a-day, year-round load"*



This is the statement of

WILLIAM S. POTTER, *Treasurer*

Elizabethtown Consolidated Gas Co.

Elizabethtown, N. J.

BECAUSE of his position as treasurer, Mr. Potter's interest in an appliance goes even beyond its sales possibilities. Net profits on the load to be derived is his chief concern. And that's why he is so enthusiastic about Electrolux!

Not only is Electrolux the one appliance people are buying today, but also it taps a new vein of gas consumption. The load which Electrolux gives is not seasonal. It does not have peak hours. No additional work is necessary to take care of meter-reading billing. Instead, year-round, 24 hours a day, Electrolux puts new, profitable MCF's on your lines . . . takes the small "convenience user" out of the non-profit class.

You'll find it will *pay well* to put intensive effort behind the sale of Electrolux in your territory. We'll gladly cooperate with you—both in helping to train your salesmen and by supplying merchandising and sales plans. Write today. Electrolux Refrigerator Sales, Inc., Evansville, Ind.

ELECTROLUX THE *Gas* REFRIGERATOR

Michigan's Natural Gas Development

F. R. FRYE, petroleum engineer for the Department of Conservation, State of Michigan, gives *Western Gas* the following summary of natural gas developments in his state—of particular interest at this time when several organizations have development programs under way for utility service of Michigan natural gas.

To date four natural gas fields have been developed in Michigan and in addition casinghead gas is available in various oil fields. In all there are 32 dry gas wells with a combined open flow in excess of 100 million c. f. The proved gas acreage is something over 5,000 acres. It is estimated that 20,000,000 c. f. of casinghead gas is available in the oil fields in central Michigan. Reserves are estimated at present from 40 billion to 55 billion c. f.

At Muskegon the West Michigan Consumers Co. has a line which serves various industries in that city with both dry and casinghead gas, with about 1,000,000 cubic feet per day.

In Central Michigan the Consumers Power Co. has a 43-mile 8-inch line from the Broomfield gas field to Midland. They also serve the farmers along the route.

The Gas Corp. of Michigan has a 4-inch line from the Vernon gas field which serves the cities of Clare and Mount Pleasant, as well as the village of Rosebush.

Permission has been given by the Michigan Public Utilities Commission to the Michigan Natural Gas Corp. to build a line from the central Michigan area to Saginaw and Bay City, but the actual building of the line has not been started.

L. A. Miller and J. P. McCloskey have secured franchises to serve a number of smaller cities with natural gas in the central part of the State, but their project also is in the formative stage.

A new book on the oil and gas fields of Michigan is nearly ready for publication by the Michigan Geological Survey, probably due from the press about May 1, according to Mr. Frye.

Engineering Week of Interest to Gas Industry

A conference of engineers at Chicago, during Engineering Week, June 25-30, is being sponsored by the Century of Progress Exposition. The gas industry will be particularly interested in sessions of the American Society of Mechanical Engineers, the American Petroleum Institute, the American Society of Heating and Ventilating Engineers and the American Institute of Electrical Engineers. Some 20 of the national engineering societies will also participate with sectional and national meetings. The Sixth Midwestern Engineering and Power Exposition is also to be held at the Coliseum during that week. At this exposition some 300 manufacturers will show late developments in steam generating equipment for power and process purposes. In addition there will be exhibits of equipment such as gas burners, ventilating and air-conditioning equipment, pumps, electrical apparatus, etc.

Vancouver Island Extension Planned for Early Start

Active work will begin shortly in adding 28 miles of main to serve Oak Bay, Saanich, and Esquimalt on Vancouver, Island, by British Columbia Electric Power and Gas Co., service to come from the Victoria plant. Four-inch, 3-inch and 2-inch main will be used, distribution being at about 12 pounds pressure. Approximately $100,000 will be spent in the first year's work which will add 20 of the ultimate 28 miles to the extension.

Pyote Office Moved to Monahans

Southern Union Gas Co. late in January moved its Pyote office to Monahans, Tex. Harvey Beauchamp is district manager and Ray Keenan has been employed as manager of the new office. A full line of gas appliances will be on display.

New Quarters at Crowell

Texas Natural Gas Co. will move its Crowell, Tex., office into another building recently purchased, as soon as remodelling work is completed. The rear of the building will be used for shop and storage.

GLOBE
DAIRY
LUNCH
AGAIN EMPHASIZES
QUALITY

Globe Dairy Lunch prices are moderate; the average check is small, but everything Globe serves is of unquestioned quality. And now Globe Dairy Lunch emphasizes this fact by installing four of the latest type stream-lined, insulated, thermostatically controlled Madsen Cuisine Ranges in two of its Los Angeles plants. Globe customers may never see these four Madsen ranges in Globe's spick and span kitchens, but they'll sense their presence there, for Madsens make good food even better.

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IRON WORKS, LTD.
P. O. Box 601, Huntington Park, Calif.
(Suburb of Los Angeles)
MADSEN HOTEL AND RESTAURANT KITCHEN EQUIPMENT
Sold by Leading Equipment Dealers

Dependable
A.G.P.
Products
IDEAL BOILERS
A. G. P. WATER HEATERS
A. G. P. SPECIAL WATER HEATERS
THE "DICTATOR" LOW-PRICED WATER HEATERS
A. G. P. REDFLASH CONVERTORS
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Of course! All Gas-fired and Fully Automatic!
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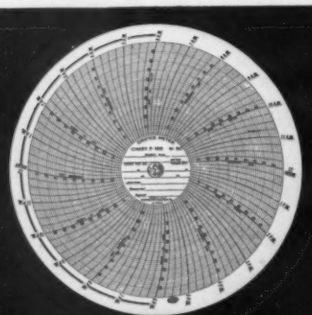
40 West 40th St. New York, N. Y.
Division of
AMERICAN RADIATOR COMPANY


All dimensions of ARCCO Orifice Meter Charts are STANDARDIZED
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Planimeters and integrating machines need NOT be re-set to varying zero radii
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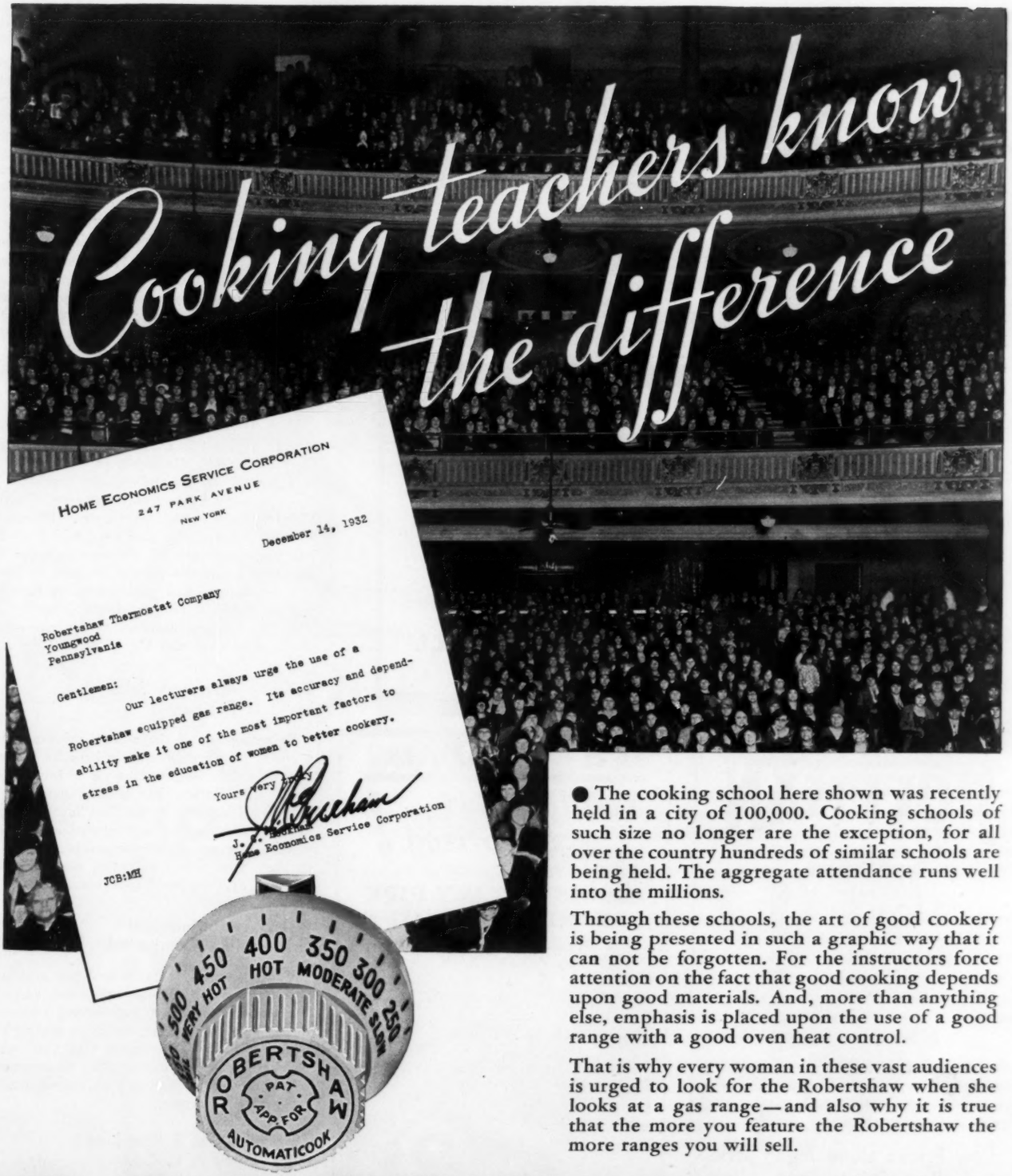
AMERICAN RECORDING CHART COMPANY
MUtual 9183 LOS ANGELES, CALIFORNIA 428 Boyd Street


Cooking teachers know the difference
HOME ECONOMICS SERVICE CORPORATION
247 PARK AVENUE
NEW YORK
December 14, 1932
Robertshaw Thermostat Company
Youngwood
Pennsylvania
Gentlemen:
Our lecturers always urge the use of a Robertshaw equipped gas range. Its accuracy and dependability make it one of the most important factors to stress in the education of women to better cookery.
Yours very truly
J. B. Beecham
Home Economics Service Corporation
JCB:MH
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VERY HOT HOT MODERATE SLOW
ROBERTSHAW
PAT. APP. FOR
AUTOMATICOOK

● The cooking school here shown was recently held in a city of 100,000. Cooking schools of such size no longer are the exception, for all over the country hundreds of similar schools are being held. The aggregate attendance runs well into the millions.

Through these schools, the art of good cookery is being presented in such a graphic way that it can not be forgotten. For the instructors force attention on the fact that good cooking depends upon good materials. And, more than anything else, emphasis is placed upon the use of a good range with a good oven heat control.

That is why every woman in these vast audiences is urged to look for the Robertshaw when she looks at a gas range—and also why it is true that the more you feature the Robertshaw the more ranges you will sell.

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ROBERTSHAW THERMOSTAT COMPANY • YOUNGWOOD, PA.

Over 10,000,000 In Use

Mile upon mile of new pipe line adds to the ever-increasing number of Paranite Gaskets now in use.

TRADE PARANITE MARK

It's safest to specify Paranite.

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OF RAYBESTOS-MANHATTAN, INC.
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Eliminate COLD 70°

The Low Limit Control System enables your gas burner to deliver full performance by keeping enough heat in radiators and hot air registers to prevent air stratification or "Cold 70°". A low priced control with a ready market. Minneapolis-Honeywell Regulator Company, 401 East 28th Street, Minneapolis, Minn. Branch offices or distributors in all principal cities

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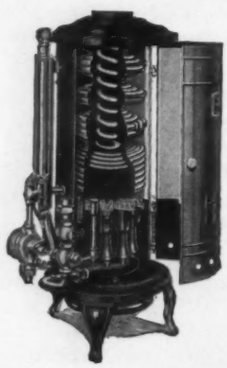

Low Prices alone mean little but Low Prices and High Quality mean everything. You can make money with HOFFMAN.

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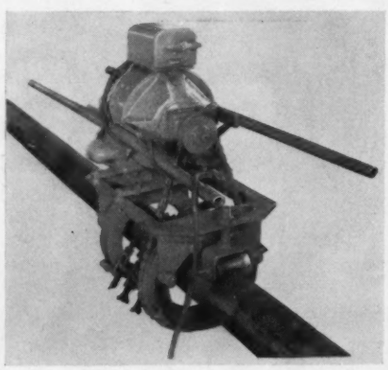
IT'S AN ADAMS

You'll Be Surprised!

at the PERFORMANCE of the

ADAMS ROTARY PIPE CLEANING MACHINE



No other method will clean pipe as thoroughly or as economically as this motor driven machine ● Either above ground or in the trench ● Without disturbing service.

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2068 Belgrave Ave. Los Angeles

Mo.-Kan. Suit Withdrawn; Subsidiary Reorganization Due

The foreclosure suit against Missouri-Kansas Pipe Line Co. has been withdrawn through an agreement reached between receivers and eastern banks, according to February announcement. Peoples - Pittsburgh Trust Co. filed the suit. It is understood that the present agreement under which the suit was withdrawn calls for reorganization of the Kentucky Natural Gas Co., wholly owned subsidiary of the Missouri-Kansas Pipe Line. The Mo-Kan. company went into receivership in February, 1932, and receivership of the Kentucky Natural followed in March; an ancillary receiver was also named in Illinois. The three receivers are understood to be in agreement on the present plan.

Executive Changes Announced for Key City Gas Co.

John H. Maclay has succeeded the late George McLean as president of the Key City Gas Co., serving Dubuque, Ia. Mr. Maclay is a former mayor and former president of the Dubuque Chamber of Commerce. Charles McLean, twin brother of George McLean, is now manager of the Key City Gas Co. He has been secretary of the company for the past four years and during the past 15 years has issued numerous publications on taxation and valuation of public utilities.

E. W. Eustace continues as superintendent of the Key City Gas Co. plant.

Byllesby Adv. and Sales Meet Is Postponed

Postponement of the annual sales and advertising conference usually held in January by Byllesby Engineering & Management Corp. subsidiaries, has been announced by W. H. Hodge, vice-president and manager of the Byllesby sales and advertising department. The conference is planned for later in the year when delegates may visit the Century of Progress Exposition.

Rising Star Municipal Gas System Completed

Construction of a municipal gas system in Rising Star, Tex., was completed early in February with about 200 meters connected to the system. Walter Smith is manager of the city utility. Southwest Gas Co., which renders service in Rising Star, is seeking to enjoin the city of Rising Star from operating the municipal system.

Nebraska Gas & Pipe Line Buys Valley P. L. Co.

Nebraska Gas & Pipe Line Co. has purchased properties of the Valley Pipe Line Co. in 24 counties of the state of Nebraska including main and lateral pipe lines and some tracts of land. The consideration is understood to have been $927,527.

Remodeled Ranger Office

Texas-Louisiana Power Co. has remodeled its local headquarters in Ranger, Tex., forming an office in the front with storage room and warehouse in the rear.

BUILD GREATER SALES AND PROFITS WITH TIE-IN ADVERTISING
Furnace heat for homes without a basement
GAS
New Comfort and Added Value
for the home you are now in
...when you install
Natural Gas
Heating Equipment
"I haven't had to look after my furnace all winter"
Blueprint of P·G·and E· ADVERTISING for the month of FEBRUARY 1933
Appliance Dealers
Northern and Central
California
Your home needs the comfort of an Electric Heater
MORE THAN 75,000 OF THESE WESIX Electric Heaters
For Quick Heat any chilly day PLUG IN AN Electric Heater
MODERN GAS HEATING CONVENIENCE
ARE YOU PLAYING FAIR with your TEA KETTLE
P·G·E

BUILD YOUR APPLIANCE SALES

AND PROFITS with TIE-IN ADVERTISING

PROMINENT among successful gas appliance dealers of 1933 will be the Northern California dealers who used TIE-IN ADVERTISING consistently during 1932.

These dealers know that tie-in advertising virtually doubles the value of their advertising dollars. They know that each P. G. and E. advertisement develops public DESIRE for gas heating appliances and invites readers to dealers' stores. Unless newly inspired prospects know WHERE to buy appliances, many possible sales will be lost.

The dealer who wants P. G. and E. advertising to produce sales for his store, profits most by running his own advertising in space adjoining that used by this Company.

Records show that aggressive Northern California dealers published 986 tie-in advertisements during 1932. The total newspaper space used by this advertising equalled 71 full pages. To increase your appliance sales during 1933, profit by the experience of these dealers.

Study the advance information on current campaigns and look at the reproductions of forthcoming advertisements contained in the circular mailed to you the first of each month. Then call your local newspaper offices and arrange to have your own advertising published in space adjoining the P. G. and E. advertisements you believe will be most helpful to your business. The result will be that a larger percentage of the prospects created by P. G. and E. advertising will be directed to your store.

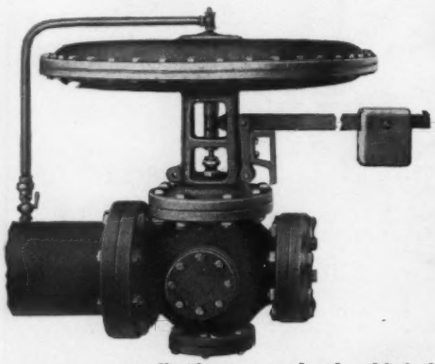
WG—203-333

P·G·and E·

PACIFIC GAS AND ELECTRIC COMPANY

OWNED . OPERATED . MANAGED BY CALIFORNIANS

A *Hundred Pounds* REDUCED CF *to Two Ounces*



FOR the sake of prudence, rarely would so high a pressure be carried in a gas line up to the point of distribution. It is not here advocated. But the Fulton Low-Pressure Regulator would do its part, so far as that is concerned. More frequently, the pressure on the intake is one to fifty pounds and at the outlet a few ounces as required for safe and efficient use. Such reduction the C-F Regulator accomplishes exactly and surely. It is so balanced as to be unaffected by changes of pressure on the inlet side. It has an automatic cut-off, if gas supply should fail! It is easy to install, never sticks, reduces friction to a minimum and gives unfailing satisfaction.

C-F appliances are available for all requirements of gas control, at all pressures. They have been recognized by the industry as the best of their respective kinds, for over forty years. Catalogs on request.

The Chaplin-Fulton Manufacturing Company
28-40 PENN. AVE. PITTSBURGH, PA.

REPRESENTATIVES
Westcott & Greis, Inc.: Dallas-Tulsa
Jno. W. Crawford, Sales Engineer: Los Angeles
Parsons Engineering Co.: Los Angeles-San Francisco

FULTON *Low-Pressure* REGULATORS

Dearborn
TRADE MARK REGISTERED

Pipe Cleaning Machine

(JINNETT PATENTS)

Economy in Reconditioning

The following report is quoted from Dearborn Representative A. C. Mceller:

"This morning I watched the use of our pipe cleaning machine on some 8-inch steel gas line they are reconditioning. The pipe they are working on at the present time has been in the ground for about six years and originally had a coating of tar and cloth wrapper. The soil in this locality is clay. The covering is in bad condition, moisture having penetrated the wrapper and the tar and they are cleaning it all off with the pipe cleaning machine and applying a coat of NO-OX-ID 'G Special,' then wrapping it with the Gray Wrapper, and then applying another coat of 'G Special.'

"They are very well satisfied with the cleaning machine and have not only cleaned a great deal of the tar covered pipe, but have also cleaned some eight-inch pipe that was very badly rusted and corroded." (Name on request.)

DEARBORN CHEMICAL COMPANY
LOS ANGELES:
807 Mateo Street, Phone TRinity 3385
SAN FRANCISCO
421 Bryant St., Phone SUtter 8688

FRASER
GAS APPLIANCES AND FURNACES

Announcing—

Two New Large Capacity

FLOOR FURNACES

No. 135 —50,500 B. T. U. Input
No. 135A—57,000 B. T. U. Input

The Complete Line now includes
7 sizes Floor Furnaces
11 sizes Basement Furnaces
2 sizes Wall Furnaces
5 sizes Pipeless Furnaces
5 sizes Console Heaters
Baked or Porcelain Enamel

Write for our new catalog and price list.

Manufactured by

Fraser Furnace Company
Stockton, Calif.

Distributed by

H. R. BASFORD CO. San Francisco Los Angeles

Norman Bel Geddes Designs New SGE Range Line

STANDARD GAS EQUIPMENT CORP., New York, N. Y., has announced its new line of gas ranges styled by Norman Bel Geddes, nationally known artist-industrialist. To get a first-hand idea of the style and utility elements desired by Ameri-

can housewives in a gas range, Mr. Bel Geddes secured the views of 1200 representative American women. A basic model, incorporating a number of new features was then designed. As the view above indicates, the model stresses rounded corners, and surfaces without projections, simplifying the task of keeping the range clean. Among other features of special interest in the new model are the oversized oven, "stoopless" broiler located directly under the cooking top, non-tip top grates, spring-balanced oven doors, enamel burner box pan and lining, heat control located in the manifold panel. All the table-top models in the line are built on one basic chassis.

Norman Bel Geddes, designer of the Modern SGE Gas Range, has a long record of artistic achievement, much of it built around commercial and industrial subjects. To indicate the variety of his work he has designed modern office interiors and building exteriors, given modernistic treatment to such utilitarian objects as weighing scales, and in the strictly artistic realm has created stage sets for such outstanding productions as "The Miracle."

Consolidate Two Standard Gas and Electric Properties

Wisconsin Public Service Corp., Milwaukee, Wis., and Wisconsin Valley Electric Co., Stevens Point, Wis., were consolidated effective Feb. 1, under the name of Wisconsin Public Service Corp. Both are subsidiaries of Standard Gas and Electric Co., serving adjoining territory in central and eastern Wisconsin. Among towns rendered gas service are Green Bay, Oshkosh, Sheboygan, Two Rivers, Stevens Point, and numerous others.

Stone & Webster to Manage Consolidated Elec. & Gas Units

The properties of Consolidated Electric & Gas Company, except the Seattle Gas Co., were placed under the management of Stone & Webster, Inc., by recent vote of the board of directors of the company. The agreement does not involve the purchase of an interest in the property by the engineering and management company.

Included in the arrangement are substantially all the properties of the Central Public Service Co. before it was reorganized recently. The property embraces 587 communities in North Carolina, Maryland, Virginia, Tennessee, New Jersey, Delaware, West Virginia, Michigan, Maine, Illinois, Indiana, New Jersey, Pennsylvania, Quebec, Florida, New Brunswick, Georgia, South Carolina, Alabama, Texas. A gross earning of $21,000,000 was shown by the property for the 12 months ending September 30, 1932.

Colonel Albert E. Pierce has resigned as chairman of the board of Consolidated but will continue as chairman of the board of Central Public Utility Corp.

Preliminary Work Beginning on Lubbock Line

John W. Moore of the Lubbock Gas Co., Lubbock, Tex., and president of John W. Moore Construction Co., also of Lubbock, informs *Western Gas* that the 120-mile, 8-inch welded line to Lubbock, on which engineering work has begun, will pass through the following towns: Ropesville, Meadow, Brownville, Wellman, Seagraves, Eunis, and Seminole, en route to Lubbock.

Gas will came from a location about 10 miles south of Eunis, N. M., 30 miles southwest of Hobbs. Three wells located there have a production of 175 million feet according to Mr. Moore.

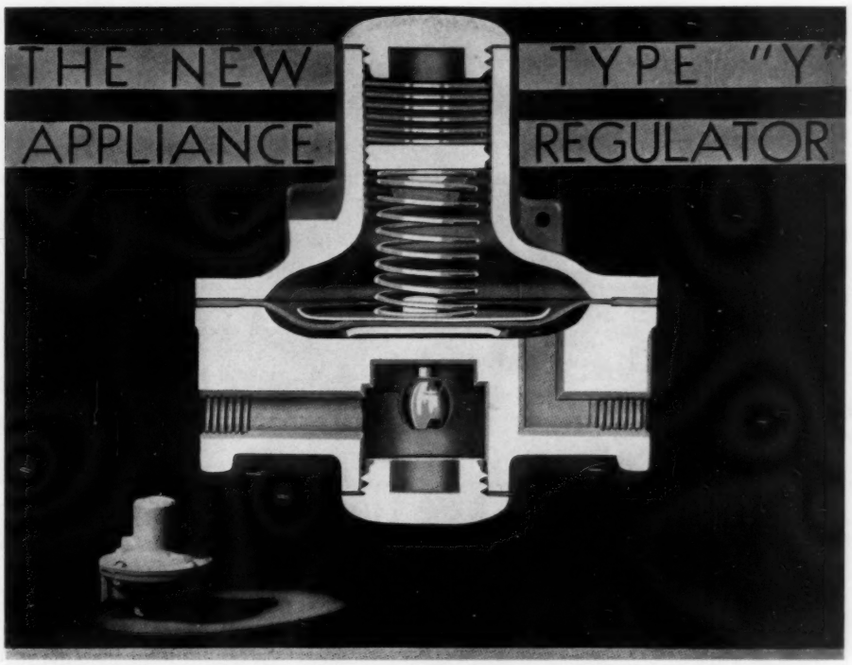
Surveyors were in the field late in February securing right-of-way and it is hoped to start construction well before May 15. By terms of a franchise which Mr. Moore holds in Lubbock construction of main lines and distributing system must begin by that date, with completion on or before November 1.

4-Inch Line Into Hudsonville Field Now Under Way

According to H. H. Sprowls, vice-president of Indiana Southwestern Gas Corp., Vincennes, the company has begun construction on its 10-mile extension into the Daviess County gas field. The line is to be 4-inch coupled, extending from the company's present system at Washington southeasterly to the producing area in southern Daviess County which is known as the Hudsonville Gas Field. The Indiana Southwestern Gas Corp. supplies natural gas to the Southern Indiana Gas and Electric Co. at Evansville and to the Consolidated Electric & Gas Co. for service in Vincennes, Princeton, and Washington, Ind.

Sales Manager at Salt Lake City

S. E. Cowan has taken the place of L. D. Simmons as sales manager of Utah Gas and Coke Co., Salt Lake City.



APPLIANCE manufacturers and gas companies alike welcome the development of this new regulator. ● We invite your attention to its performance characteristics, ruggedness and simplicity. ● Now available in 1/4, 3/8, 1/2, 3/4, 1 and 1 1/4-inch sizes at attractive prices.

For detailed information address:

RELIANCE REGULATOR CORPORATION

1000 MERIDIAN AVE., ALHAMBRA, CALIF.

Manufacturers of Gas Regulators for All Purposes

RELIANCE

If you would keep in touch with the Natural Gas and Butane industries, send a check for $2.00 to

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810 South Spring Street, Los Angeles

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Company.....

Position Occupied.....

Street Address.....

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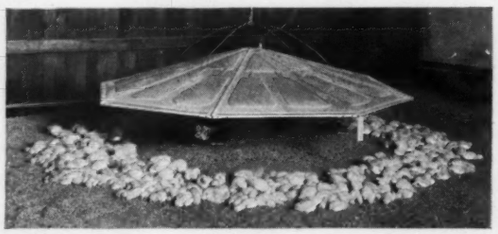
Subscription Rates: I Year $2.00; 3 years $5.00; Foreign $3.00 per year.

GAS BROODERS

The new type Hart Radiant Gas Brooders are causing a sensation amongst poultrymen. They are proving by far the best means of brooding chicks. Increase your sales of gas by handling this leading line. Hart Gas Brooders will raise a greater percentage of chicks with less labor and expense than any other method. All brooders thermostatically controlled—hang from ceiling—teach chicks to perch—gas pipe runs overhead with flexible gas tubing running to brooder. Get your share of the vast potential fuel load for brooding of chicks and turkeys. One poultryman is worth a dozen ordinary household gas consumers.

Send at once for descriptive literature, discounts, etc.



Flashlight photograph of chicks sleeping under a Hart Gas Brooder at the world's largest poultry ranch where Hart Brooders are used exclusively. One hundred and forty-four brooders in operation the year round brooding five hundred to one thousand chicks to the brooder.

H. W. HART MFG. CO., P. O. Box 404 W, Santa Monica, Calif.

More Hart Gas Brooders are being sold on the Pacific Coast than any other make.

The Goodman Stopper

The Reliable Shut-off for Street Mains

Equipped with Improved Patented Locking Sleeve, which locks both handles to the pipe. Stopper cannot slip. Gas cannot pass.

Safety Gas Main Stopper Co.
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Most desirably situated on Wilshire Boulevard, adjoining beautiful Westlake Park---15 minutes from the city center. By bus directly in front of the building and by three car lines within one block.

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Apartments from $75 a Month
Also Daily and Weekly Rates

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Modern, Home-like and Supremely Comfortable

LOS ANGELES

Classified Advertising

Classified advertising five cents per word; minimum $2.00 per insertion. Situation Wanted advertisements up to 50 words will be published three consecutive issues without charge. Small professional cards 1-in. deep by 21 ems wide are $6.00 monthly on 12-time contract.

SITUATIONS WANTED—MALE

Situation Wanted by House Heating Engineer; 6 years with large warm air heating corporation; for past two years has specialized on conversion gas equipment, gas furnaces and air conditioning. Capable of figuring, laying out and selling central heating systems. Age 44. Married. Address Box 231, *Western Gas,* 810 South Spring St., Los Angeles, Calif.

Moran Corp. Starts Work on 35-Mile Houston Line

Having secured a franchise to lay a natural gas line from Conroe fields to Houston, Tex., the Moran Corp. of Texas has begun engineering and right-of-way work on the project. The line will be 35 miles long, of 10-in. pipe, and will serve industrial consumers only. The Moran Corp. headquarters at Houston and now serves city of Conroe.

Protecting Buttonwillow Line Against Corrosion

According to F. F. Doyle, manager Pacific Gas and Electric Co.'s natural gas division, a 5-mile section of the company's Buttonwillow line is being uncovered, the pipe being cleaned and a double wrap applied for protection against unusually severe soil corrosive conditions.

P. J. O'Meara Represents Sheer Co.

H. M. Sheer Co., Quincy, Ill., manufacturer of heat control equipment, has announced the appointment of P. J. O'Meara, 357 Ninth St., San Francisco, as distributor in Northern California. James I. Krueger of San Francisco, with whom Mr. O'Meara has been associated for a number of years, was formerly representative for the company in that section.

5th Oil and Gas Men's Tourney

Brentwood Country Club, Los Angeles, Calif., held its fifth annual Oil and Gas Men's Tournament on February 22, with between 300 and 400 men of the Southern California industry participating.

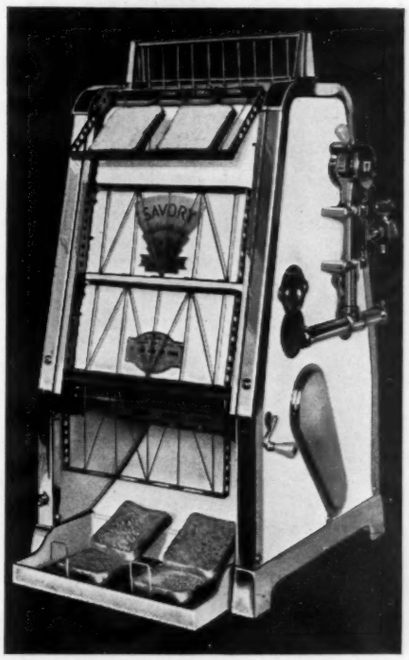
There are 2 PROFITS in selling the Savory radiant gas Toaster

THERE is a very good *first profit* in selling Savory radiant gas Toasters—because you can easily demonstrate the fact they save money for their users, and because there is such a wide market for them; hotels, institutions, restaurants, lunch rooms, drug stores, sandwich-bars are all prospects.

Savory Toasters pay a *second profit* every day they operate, on the gas they consume. But this consumption is so inexpensive in contrast to the cost of maintaining electric toasters that the Savory is replacing electric installation in place after place.

SAVORY
radiant gas
TOASTERS

Write for full particulars to Savory, Inc., Dept. WG-3,591 Ferry Street, Newark, N. J.



SAVORY MODEL P. D. makes as many as 360 slices of perfect toast per hour at a cost of only ¾¢ to 3¼¢.
Other sizes to meet every need

"MODERNIZE as you repair"

THE SPRAGUE METER COMPANY

Bridgeport, Conn.

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Warmth

is best supplied by
GAS—THE IDEAL FUEL!

Complete consumer satisfaction cannot be fully assured unless your fuel is used in efficient, durable, time-proven appliances.

PAYNE
GAS FURNACES
FLOOR FURNACES
CONSOLE HEATERS

Have made thousands of satisfied gas consumers. We have your interests at heart. We should be able to work together for our mutual benefit. Let's talk it over!

Payne
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Beverly Hills, California

There's a Payne Heat System for Every Climate and Bldg.

SOUTH CHESTER STEEL PIPE

Excels for Gas Service

The unusual care given to accuracy of diameter and welding qualities, makes Chester Pipe a favorite for gas lines.

SOUTH CHESTER TUBE CO.
Chester, Pa.

Combination Company and Electric Range

(Continued from Page 9)

Gross revenue from electric range 1935 Kwh at 3c		$58.05
Commodity cost (at 4 mills per Kwh)	$ 7.74	
Annual fixed charges	6.50	
Extra service	3.00	
Total direct costs		17.24
Net from electric range		$40.81
Loss in gross gas revenue (11.8 M c.f. at $.900)	$10.62	
Commodity cost of gas saved at 25c per M c.f.	2.95	
Net loss from gas range		7.67
Net gain to company per range per year because of substituting electricity for gas		$33.14

Here again the inclusion of distribution expense of 25 cents per M c.f. for gas and 6 mills per Kwh for electricity would materially affect the result, decreasing the net gain to $23.30.

While this at first glance is an attractive financial picture, the joker in it lies in the extremely high selling costs necessary to put electric range business on the lines under such a differential in operating cost to the consumer. And here too the loss of the domestic cooking business will leave idle capital in the gas department and necessitate such increases in rates for other classes of service as to open the door for oil and other competitors.

The writer is of the opinion that the correct policy for a combination utility is to assume that its primary function is to supply the best possible domestic cooking service at a reasonable cost. There are very few situations in which the electric range can be recommended in gas territory under this premise. However, the electric range is an excellent appliance and under certain conditions, such as suburban territory not reached by gas or when preferred by the customer who has been given a fair, comparative statement, the company is fully justified in having it for sale and in giving it high recommendation.

B. C. Electric's New Plant Now Operating

BRITISH Columbia Electric Power and Gas Co.'s new Vancouver plant, illustrated on this month's cover of *Western Gas*, was officially put into service at noon of January 31. Its construction was begun about a year ago. The capacity is 3,000,000 c. f. a day, the present installation being the first unit of a plant with an ultimate daily capacity of 20,000,000 c. f.

The new plant is of the intermittent vertical chamber oven design, one of the few of this type in existence. It will utilize small coal, producing an excellent grade of coke. About 70,000 tons of British Columbia coal will be used annually, and produce 35,000 tons of coke. Other by-products of the plant will be tar, ammonia, and sulphate of ammonia.

Special issues of the Vancouver News and the Vancouver Sun devoted large space to announcement of the new plant and a review of the local gas industry. The company's display advertising gave much prominence to the use of Vancouver Island coals, pointing out that patronage of the gas company also meant support of another British Columbia major industry.

No. States Power Personnel Changes Announced

C. A. Dow, formerly assistant to the manager of the Wisconsin division, Northern States Power Co., at Eau Claire, Wis., has been made manager of the company's southwestern division, replacing C. D. Hunt. J. G. Lynch, formerly general superintendent at Fargo, has been transferred to Wisconsin as assistant manager. R. G. Knobloch, formerly assistant manager at Mankato, has gone to Montevideo as general superintendent of the southwestern division. L. O. Rasmussen, formerly general superintendent of the southwestern division, is now general superintendent at Fargo.

Natural Gasoline Ass'n. to Meet

The Natural Gasoline Association of America will hold its annual meeting in Tulsa, May 15, 16 and 17. The program committee of which E. L. Peck, Empire Oil and Refining Co., is chairman, is now arranging papers for the convention.

To Supply Natural Gas to Middle Tennessee Towns

The Cumberland Production Co., Inc., of McMinnville, Tenn., was organized in February to take over the properties of Tennessee Gas & Oil Co. The new organization has contracted to produce natural gas and supply various towns in middle Tennessee, and is now drilling a test well near Cookeville. Several other wells will be started immediately.

8-inch Line from Cotati to Sebastopol, Calif.

Pacific Gas and Electric Co. will start construction in the near future on its new 8-inch high pressure gas line from Cotati to Sebastopol, a distance of approximately 10 miles. This line is to take care of increased load at Sebastopol and Graton, Calif. The territory is already being served with natural gas from the lines of the Pacific Gas and Electric Company.

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HOTZONE SPECIAL

Self Action Storage Gas Water Heaters

Are

Correctly designed to furnish real

HOT WATER SERVICE

For a Fixed Monthly Charge

Heaters are equipped with

REFLEX AUTOMATIC BURNER

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SAFETY GAS SHUT-OFF

made in
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gallon sizes

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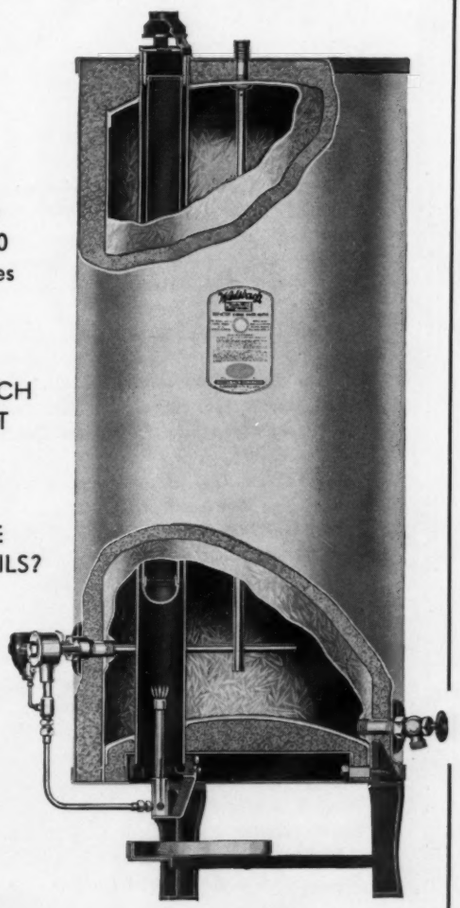

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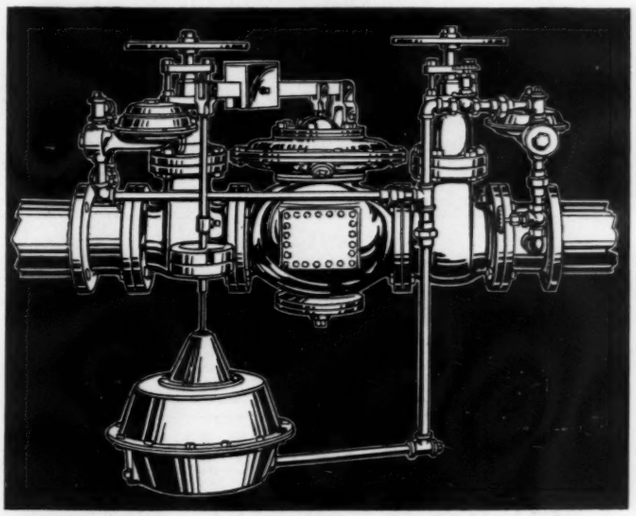
Assured Performance and Years of Dependable Service



● REYNOLDS Regulators used in the Gas Control Field meet specific requirements and assure successful operation. There are many factors involved in the distribution of gas that are invariable *musts*, and also depend largely for success upon the regulator that controls the gas. Safety, accurate performance, years of service and economic upkeep are tangible facts that every gas man knows must be built into the unit bought.

Reynolds Regulators are precision built of rigidly inspected materials. They are put through tests at the factory to determine efficiency and records of the tests filed at the factory. This makes it possible for Reynolds to always be able to check on Regulators in service. For customer convenience it affords a means to determine efficiency of units at all times. Through their Engineering Department Reynolds offer a service to the field—co-operation in working out, recommending and building of Gas Regulators. Feel free to write for literature and information on any gas control problem.

REYNOLDS PRODUCTS

for all kinds of pressure reductions—for either artificial or natural gas

GOVERNORS—Intermediate Pressure, Triple Outlet, Holder, Toggle Type Street. **REGULATORS**—High Pressure Service, Low Pressure Service, Intermediate Pressure, High Pressure Line, Single and Double District Station. **VALVES**—Automatic Quick Closing Anti-Vacuum, Relief, Cut-Off. **SEALS**—Mercury and Dead Weight. **MODEL 30** manufactured for vertical or horizontal installation.

● **REYNOLDS BRANCH OFFICES:** 422 Dwight Building, Kansas City, Mo.; 2nd Unit, Santa Fe Building, Dallas, Tex.
● **REPRESENTATIVES:** Eastern Appliance Co., Boston, Mass. F. E. Newberry, Avon, N. J.

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Anderson, Indiana, U. S. A.

GAS CONTROL SINCE 1892

DIRECTORY

Byllesby Engineering and Management Corporation

Wholly-owned subsidiary of Standard Gas and Electric Company

231 South La Salle Street, Chicago
New York Pittsburgh San Francisco

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worked out the solution of a
GAS OR EQUIPMENT PROBLEM
and want patent protection for the same, write me for an opinion on the probable patentability and an estimate of the cost.
J. KAPLAN
Washington Loan & Trust Bldg. Washington D. C.
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GENERAL MAGNETIC GAS VALVE FEATURES: Electric Hum Eliminated, ½-3" sizes. Low and High Voltage. Built for High Pressure Gas. Made in slow-opening types. Simple in Design—Infallible in Operation—Low in Price.
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"HIGH-LOW" (2 stage) Electric Gas Valve for conversion burners, gas furnaces; also Electric Clock Thermostats, Limit Controls, Space Heater Regulators, etc.
Write for Low 1932 Prices
H. M. SHEER CO. **QUINCY, ILL.**

GAS PIPE LINE MAP

Compiled by the Editors of WESTERN GAS—Size 45" x 45"

The most comprehensive published; covers the 22 western states in detail. Gives gas fields, names of natural gas communities; sizes of pipe lines and names of pipe line companies.

Prices: $1.50, Heavy Bond Paper; $3.50, Printed on Cloth

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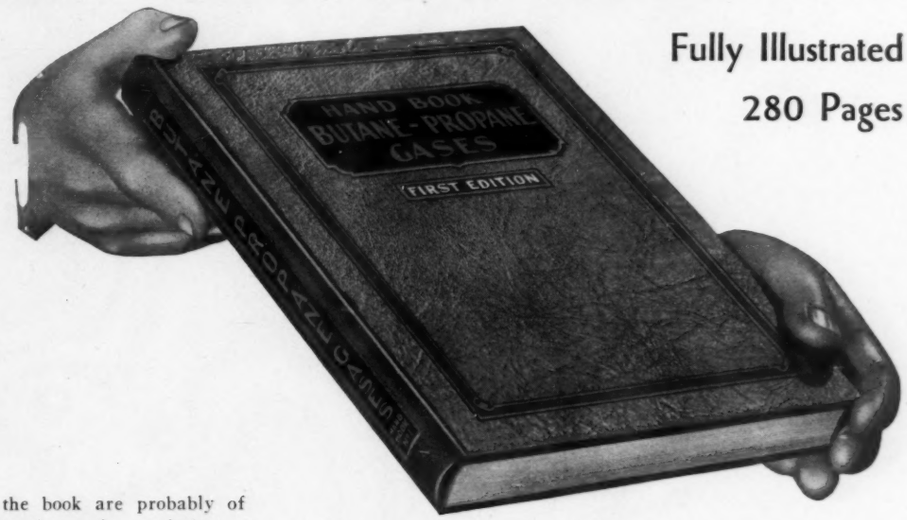
BOOK REVIEWS

Approve First Edition of BUTANE-PROPANE Hand Book



Fully Illustrated

280 Pages

● ". . . . . The last six chapters of the book are probably of greatest interest to those in the manufactured gas industry, since they cover the use of butane and propane with manufactured gas in central plants for butane-air and undiluted vapor service, and lastly the use of liquefied petroleum gases in gas burning appliances."

AMERICAN GAS ASSOCIATION MONTHLY, January, 1933.

● ". . . . . In addition the handbook presents a catalog section giving detailed information on products designed for butane-propane service, a buyer's guide, listing firms supplying equipment, appliances or services for the industry."

THE OIL WEEKLY, December 5, 1932.

● ". . . . . This first edition of the Handbook of Butane-Propane Gases represents the joint effort of a score of more individuals directly associated with butane-propane enterprises. Its range of subject matter is handled in 12 chapters."

PETROLEUM WORLD, December, 1932.

● ". . . . . This new addition to oil literature will be welcomed by all those in need of the latest knowledge of the characteristics and technique on such liquefied gases."

THE PETROLEUM TIMES, London, England, December 17, 1932.

● ". . . . . The Book discusses production, transportation, distribution and utilization problems."

NATIONAL PETROLEUM NEWS December 21, 1932.

● ". . . . . These chapters are edited by experienced men in the particular branch of the work, and thus, we feel that the book is really an authority."

NATIONAL SAFETY NEWS February, 1933.

● ". . . . . Particular interest attaches to the publication due to its being the first compilation of reference data pertaining to this industry."

REFINER & NATURAL GASOLINE MANUFACTURER, December, 1932.

● ". . . . . A directory of central plants enumerating the operating town plants distributing piped butane-propane gases; a complete bibliography covering the literature on liquefied petroleum gases, and a detailed subject index to the book's contents."

THE OIL AND GAS JOURNAL November, 1932.

Feature Contents of this Complete Reference Work

A Chronology of Liquid Gas Development; Physical Properties of the Liquefied Petroleum Gases; Properties of Butane-Propane Mixtures and Relation of Properties to Temperatures; Composition and Analytical Determination of Liquefied Petroleum Gases; The Manufacture of Liquefied Petroleum Gas; Transportation of Liquefied Petroleum Gases; The Use of Butane and Propane with Manufactured Gas; Central Plants for Butane-Air Service; Central Plants for Undiluted Butane-Propane Vapor Service; Liquefied Petroleum Gases as Industrial Fuels; Appliance Utilization of Liquefied Petroleum Gases; Bottled Gas Distribution of Liquefied Petroleum Gases; Table of flow of gas at low pressure through pipe lines; National Fire Protection Association's regulations; Catalogue Section; Buyers' Guide; Directory of Central Plants; Bibliography; Index.

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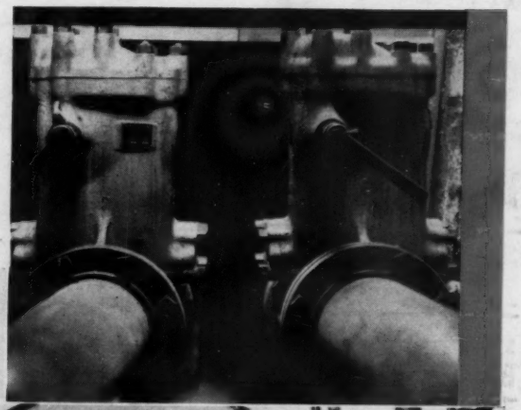
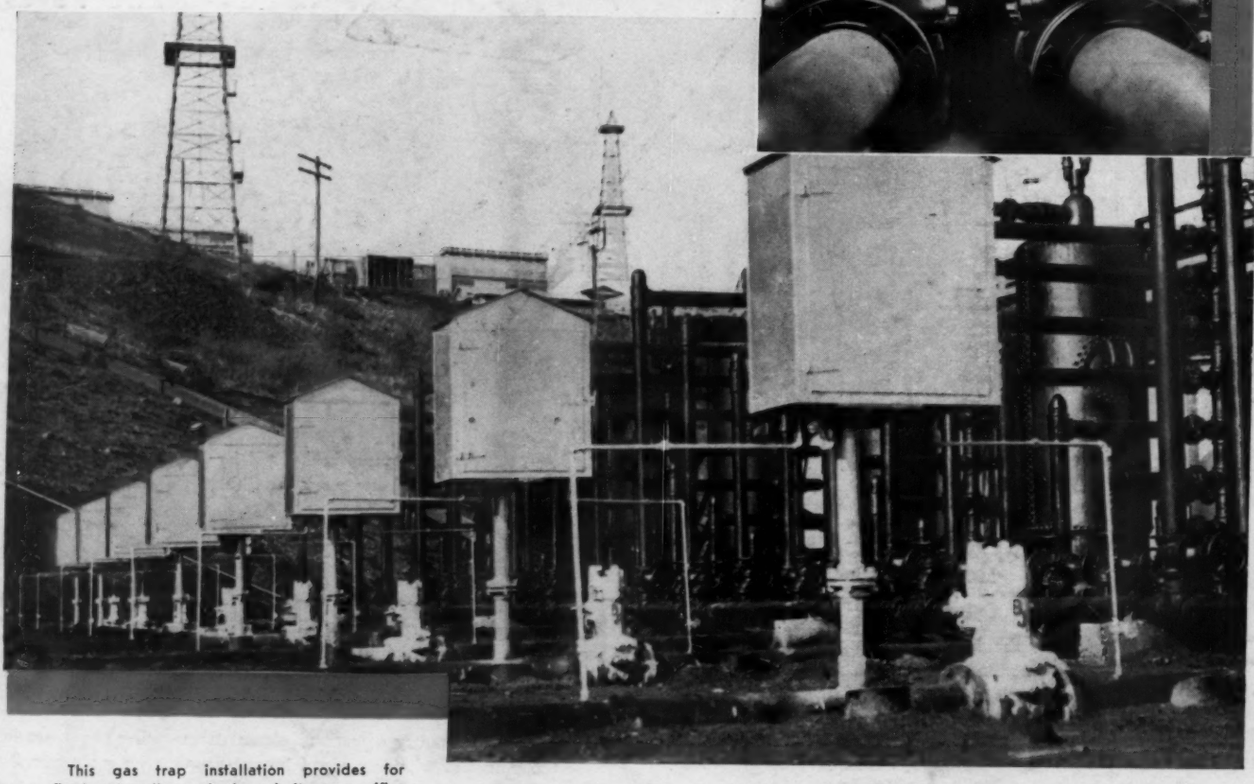
Western Gas. **810 So. Spring St., Los Angeles, California. Send me.....copies of HANDBOOK, BUTANE-PROPANE GASES, at Five Dollars ($5.00) per copy, for which I enclose check for $.....**

(Name) *(Position)* *(Company)*

(Street Address) *(City)* *(State)*

For the "tough" installations as well as the "easy" ones!





This gas trap installation provides for flowing 8 wells, each through its own orifice fitting; all through one fitting; or any other combination desired. A padlock can be applied to lock either plate in the flow line, or when desired the plates can be switched in 15 seconds to measure varying loads.

The insert view illusfrates a set-up with an overhead clearance of only 24 inches above the center line of the two 8 in. feeder lines. The compact construction of the BJ Duplex Fittings makes them ideal for such "tough" installations, where space is limited, and a by-pass would be impossible. Notice the permanently attached handles which make it possible to change plates almost instantly to meet fluctuating load demands.

DUPLEX ORIFICE FITTING

THE feature of two plates with different size orifices, enclosed in each BJ Duplex Fitting, eliminates the need for expensive and complicated by-pass installations. Changing plates to measure peak and minimum loads is a matter of seconds only; or by installing one blank plate, a temporary shut-off valve is available at no extra cost.

Ask for dimension data and other specifications—a BJ Duplex will solve every one of those perplexing problems.

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